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UNITED STATES DEPARTMENT OF AGRICULTURE  
Bureau of Agricultural Economics

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FARMING ADJUSTMENTS IN THE FAR WEST TO MEET DEFENSE NEEDS  
AND STABILIZE AGRICULTURE

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Prepared by

Bureau of Agricultural Economics  
Berkeley, California

Revised  
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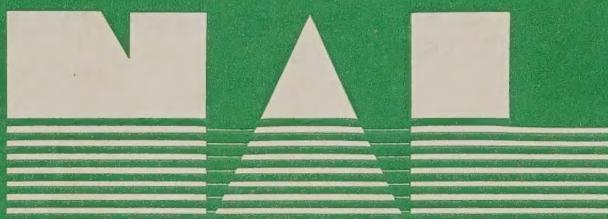
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Prefatory Note

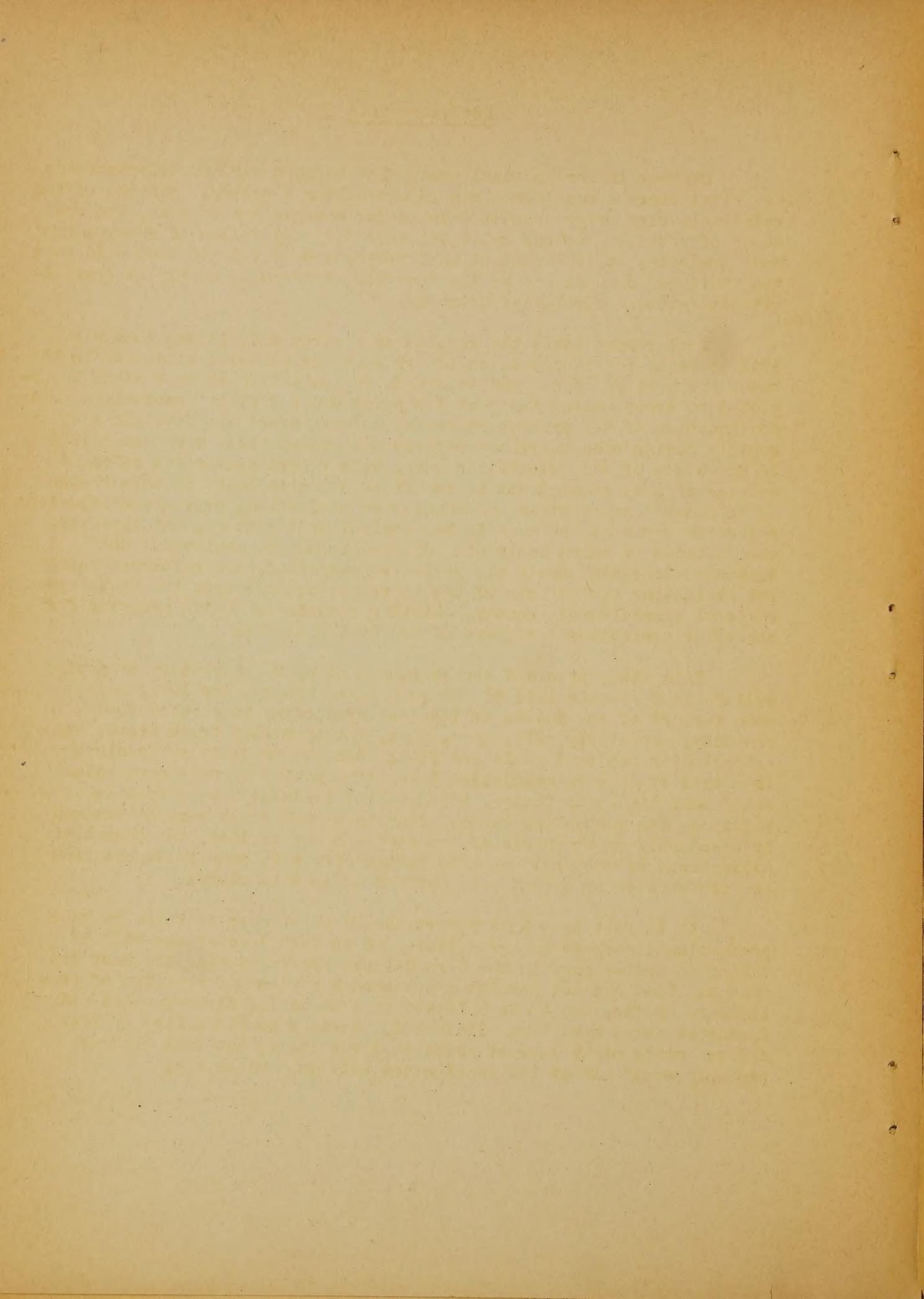
CATALOGING PREP

Changes in agricultural production to meet war and defense needs are vital current considerations in agricultural policy. Because of the relatively slow progress with which major changes can be made, and because of possible serious maladjustments that may follow if changes are made unwisely, it is important that programs be developed that will meet the emergency demands and at the same time conform as nearly as possible with long-time desirable adjustments.

This report gives the results of a study made in the summer of 1941 to bring together data on the present agricultural situation in the seven Far Western States and to obtain an indication of what might be expected to occur during the next few years under certain assumptions as to continuation of the present emergency defense program. Situations change rapidly during such emergency periods and expectations vary accordingly. On the basis of the assumptions made, this report summarizes informed opinion of many specialists in the field of agriculture in this region as to future expectations and changes in production, presents conclusions regarding desirable changes in the agricultural pattern, and suggests some methods by which desirable adjustments may be achieved. Some tentative long-time desirable goals are suggested as a reference point for evaluating the effects of the emergency demands upon the State and regional agricultural economy. Similar reports are being prepared for the other agricultural regions of the United States.

This study preceded the announcement by the Secretary of Agriculture in September 1941 of a Farm Defense Program for 1942, calling upon farmers of the Nation to increase production in certain food products, especially milk, eggs, meat, and specified truck crops, and establishing national goals for 1942. Because preliminary findings from this study were available at the time national goals were allocated tentatively to States, the material included here served as a reference for such allocations. Since national goals were determined independently on the basis of expected demands in 1942, the tentative allocations of national goals to States differ in some instances from the expected changes that were arrived at in this study.

It is felt that this report should be of current value to those professional workers in agriculture and to farm leaders who will be taking an active part in the Farm Defense Program during the next few months. Time has not permitted a thorough review and revision of preliminary drafts, but it is believed that the chief discrepancies and inconsistencies have been eliminated. Further consideration of 1942 defense goals might suggest additional revisions, but such changes probably would affect the conclusions only in a minor way.



FARMING ADJUSTMENTS IN THE FAR WEST TO MEET DEFENSE NEEDS  
AND STABILIZE AGRICULTURE 1/

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Introduction

Defense Needs and Problems.— War and defense activities have created, and will continue to create during the emergency period, numerous and severe adjustments in our national economy. Agriculture has been thought of as an industry with chronic surpluses. With the increase in industrial activity accompanied by a rising consumer purchasing power and increased demands for food shipments under the Lend-Lease Act, however, the agricultural situation will change drastically. Some commodities probably will change from surpluses to actual shortages. In industry, instances have developed recently in which previously considered excess capacity proved to be entirely insufficient to meet defense demands, as in the production of steel and aluminum. Agriculture at present is in a somewhat more favorable position with regard to total productive capacity. It must plan its adjustments, however, well in advance of expected demands. Many individual units are involved, operating under greatly varying natural conditions and requiring, for many agricultural commodities, more than one season to make the desired adjustments. Every feasible effort should be made to anticipate demands and to be prepared to meet new situations as they arise. On the other hand, in making plans to adjust agricultural production to special needs, consideration must be given to whether these emergency demands can be met without jeopardiz-

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1/ Acknowledgment is made of the invaluable assistance given by the many persons contacted in Arizona, California, Idaho, Nevada, Oregon, Utah and Washington in the Agricultural Experiment Stations, Agricultural Extension Service, Agricultural Marketing Service, Agricultural Adjustment Administration, Farm Credit Administration, Forest Service, Grazing Service, and other Federal and State agencies.

ing the future, whether they move in the same or opposite direction from desirable adjustments, and what, if anything, can be done to bring about the needed shifts.

Encouragement has been given to producers recently to increase production of pork, dairy products, eggs, poultry, dried beans, and vegetables. Some estimates indicate that increases by as much as 25 or 30 percent of the 1939 production will be necessary to supply both domestic needs and British needs for some of these products. Drastic shifts in production techniques and energies are thus portended.

Agriculture in the Far West is extremely heterogeneous, produces a wide range of products under many climatic conditions, and in many areas has not become stabilized because of relatively recent settlement and development. The impacts of war and defense activities will vary by areas within the region, depending upon such factors as the type of farming, adaptability to change, and nearness to defense activities. Farmers in each area will have to consider the pertinent factors affecting them if they are to take advantage of opportunities and make the greatest contribution to national defense.

Time Periods Considered. - This report summarizes the results of a study made to estimate adjustments likely to occur in agriculture between now and the 1943-45 period, under certain assumptions as to industrial activity and farm prices. Major consideration is given to what is expected to occur under the assumed situations and to what adjustments are desirable and should take place, particularly where these appear to differ from those that the emergency situation might dictate.

In considering problems of regional adjustments in agriculture at the present, two time periods should be given consideration. The first is the immediate emergency period created by war and defense needs, which for purposes of this report is assumed to extend through 1945, and the second is the long-time desirable which should prevail when the economy has returned to a more normal situation.

Assumptions Made. - The following assumptions have been made as to the 1943-45 period:

(1) Continuation of war, with an "all-out" defense program in the United States; or, if war ends, active participation by the United States in world rehabilitation, with loans or gifts of industrial and agricultural goods to foreign countries sufficient to replace the effects of the defense program.

(2) An increase in capacity to produce steel and other essential materials.

(3) Full utilization of available nonfarm labor, except 1 million for turnover and 1.5 million for military purposes.

(4) Increase in taxation not sufficient to absorb the increase in national income payments to individuals.

(5) Continuation of agricultural programs and loans as now constituted.

On the basis of these assumptions and attendant estimates of probable national income payments, prices to be expected during the 1943-45 period were estimated for the major agricultural commodities. These estimates indicate a variable increase in prices, with prices of livestock and livestock products higher in general than crop prices. Likewise, production costs are expected to be higher, particularly for such expense items as machinery, fertilizer, and hired labor, which will in part offset the higher prices received (see tables 11, 12, and 13 for assumed prices and costs).

Approach Used. - With these assumptions as a working basis, an effort was made to determine for each State the probable adjustments in production of agricultural products. A number of well-informed individuals in each State were consulted to obtain an informed judgment as to probable farmer response under the assumed conditions of price and cost.

Major steps in this procedure were as follows:

(1) Determine the probable contraction or expansion of total crop acres from such factors as new irrigation developments, land clearing, reforestation, and submarginal land retirement, by the 1943-45 period.

(2) Within this relatively fixed total acreage, appraise the alternative advantages of various crop and livestock enterprises as suggested from a consideration of the assumed prices and costs.

(3) Ascertain the probable acreage of crops under control programs, such as for wheat and cotton, assuming that present programs continue in effect.

(4) For livestock shifts, estimate the probable increase in needs for feed and convert to a crop-acre basis, as a check on the availability of feed resources. Generally any increases will be borne by the feed crops and pasture, as range capacity is highly inflexible.

(5) Appraise the resulting estimates to ascertain if they (a) are consistent with total acreage limitations and interrelationships of one enterprise with another, and (b) realistically reflect farmer response to price in the local area or State, in the past.

The second phase of the study was to appraise and evaluate the expected shifts in production in view of the farmers' and the regional or national economic interest, both for the short-term 1943-45 period and the long-time normal. Where "expected" differs from "desirable", attempts are made to suggest remedies or to caution against certain actions that may later prove undesirable.

### Agricultural Resources of the Region

The seven Far Western States have a total land area of 454 million acres--or 24 percent of the land area of continental United States. Range and forest lands constitute by far the greatest percentage of the land area of the region, but croplands are of greater economic importance. Croplands are of three major types: Irrigated lands of the inland and coastal valleys, dry farm lands, and humid farm lands of the coastal areas.

Less than 6 percent of the land area of the region was in cropland in 1939 (table 1), varying by States from less than 1 percent in Nevada to almost 15 percent in Washington. Of the 17.8 million acres of cropland harvested in 1939, slightly more than 8 million acres, or 46 percent, were irrigated. In addition to cropland harvested, there were 1.8 million acres of irrigated pasture. The percentage of cropland harvested that was irrigated varied from 99 percent in Nevada, where rainfall over the entire State is so low that irrigation is essential in practically all areas for crop production, to only 11 percent in Washington, where large areas of crops are grown without irrigation in the humid coastal belt and in the eastern dry farm areas.

Rangelands.-- Possibilities for ready adjustment to changed conditions differ greatly among the various classes of land. The use of rangelands on the whole is rather inflexible, as to both kind and intensity of use. Although some ranges are equally suitable for cattle and for sheep, many range areas are definitely better adapted to one or the other kind of livestock. The intensity of use of most public ranges is now under the control of the Forest Service or the Grazing Service. As the policies of these Services exert an influence on the use of privately owned ranges, the range livestock industry will be affected by these policies as well as by changes in the general economic situation.

Timber production is the most important economic use of forest areas, but in many areas, especially in the northwest, grazing, watershed protection, and recreation are important complementary uses. In the intermountain area the mountain ranges provide most of the summer grazing, while spring-fall and winter grazing occurs mainly in the lower semi-desert ranges.

Dry-land farming areas.-- The outstanding dry-farm territory is the wheat region of the Pacific Northwest, in northern Idaho and eastern Oregon and Washington. Other principal areas are in southeastern Idaho and in parts of the Central Valley of California. Most of the dry-farm land is cropped in alternate years and a considerable acreage is farmed intermittently, being cropped only when a combination of favorable moisture conditions and wheat prices make these high-risk areas attractive. In 1939 there were 7 million acres of idle or fallow land, most of which was in the dry-farm areas. This acreage is equal to 72 percent of the nonirrigated acreage of cropland harvested. Two-thirds of the idle or fallow cropland is in the three Pacific Northwest States, mainly in the dry land wheat-growing areas. Most of the remainder is in California, with relatively little in Nevada, Arizona, and Utah.

Table 1.- Land use in seven Far Western States, 1939

State	Total :Percent:			Irrigated:Percentage:			Total
	Total	cropland	age of	Cropland	crop-	irrigated	irrigated
	land	1939	land	harvested	land	of total	land
	area	1/	area in	1939	harvested	cropland	1939
		cropland			1939	harvested	2/
	1,000	1,000		1,000	1,000		1,000
	acres	acres	Percent	acres	acres	Percent	acres
Arizona	72,691	731	1.0	526	471	90	575
California	100,354	8,652	8.6	6,535	3,732	57	4,277
Idaho	52,997	3,929	7.4	2,935	1,579	54	1,895
Nevada	70,273	488	0.7	436	431	99	756
Oregon	61,634	4,042	6.6	2,824	731	26	1,042
Utah	52,701	1,367	2.6	986	761	79	911
Washington	42,865	6,229	14.5	3,570	409	11	494
Region	453,545	25,438	5.6	17,792	8,114	46	9,950

United States Census of Agriculture, 1940.

1/ Includes cropland harvested, crop failure, and cropland idle or fallow.  
 2/ Includes irrigated cropland harvested and irrigated pasture.

Possible adjustments in the dry-land wheat areas to changed economic conditions vary with precipitation. In the relatively moist areas, such as eastern Washington and northern Idaho, dry field peas, barley, sweetclover pasture, alfalfa hay and livestock offer some alternatives to wheat. In the intermediate zone there is no economically feasible substitute for wheat, so alternate wheat and fallow continue through the various vicissitudes of changing moisture and economic conditions, while in the more arid parts the wheat-fallow system is disrupted by large-scale abandonment during periods of low prices or during an extended period of subnormal precipitation.

Humid Coastal Areas.- Croplands in the humid areas west of the Cascade Range in Oregon and Washington and the coastal areas of California usually have several alternatives for both crop and livestock production, which permits adjustment to changed conditions. These areas are important in dairy and poultry production and grow numerous fruit and specialty crops, though they contain a relatively minor percentage of the cropland of the region. With the exception of additional clearing of cut-over timber lands, and reclamation by drainage, the possibilities for expansion are rather limited.

Irrigated Lands.- Irrigation on approximately 10 million acres forms the backbone of much of the agriculture and social development in the West. The major irrigated areas are located in central Washington,

central and eastern Oregon, southern Idaho, central Utah, southern Arizona, and California. Scattered throughout the range areas are small irrigated areas that produce the feed and pasture on which much of the range livestock depends for winter feed.

Irrigated lands, particularly those having the better grades of soil, frequently have a wide range of possible uses, which permits wide shifts in use if the needs of the nation should demand an adjustment in types of crops grown. The alternatives are many, especially where the growing seasons are year-long, as in southern Arizona and California. Good soil management generally requires a rotation with a considerable acreage of leguminous crops or pasture, but allows a wide choice among row crops and grains. The relative profitableness of various crops arising out of cost-price relationships becomes the determining factor in inducing changes in acreage of various crops. A large increase in sugar beets, potatoes, field beans, field peas, onions, or in the acreage of many vegetables in irrigated areas is physically possible.

California in 1939 had 4.3 million acres or about 43 percent of the irrigated land in the seven Far Western States. Idaho was second in importance with almost 2 million acres irrigated, and Oregon third with about 1 million acres. The other four States had from 1/2 million to less than 1 million acres. These lands vary widely in productivity.

The limiting factor to expansion of agriculture in most parts of the western States is water rather than land. During much of the 1930's precipitation throughout the region, particularly in the Southwest, was below that of the 1920's, so that in many areas irrigated acreage was reduced, and in other areas less water was applied than was needed for high yields. During the past winter precipitation has been much above normal, providing plentiful supplies of water in storage reservoirs and recharging underground water supplies. In Arizona, for example, water supplies in reservoirs are the greatest on record and are sufficient for a normal irrigation use for 2 years. This gives the basis for expansion above the unusually dry years of the recent past.

New-land Developments.—Reclamation developments now under construction or investigation in the region will eventually supply water for many thousand additional crop acres. Most of these, including the Columbia Basin project in Washington and the Central Valley project in California, the two largest, are not expected to affect production in 1943-45.

Some new irrigation projects are being opened for settlement at present, and other areas soon will be available, but because new projects generally require several years before land and yields are well developed, these projects are not expected to add materially to production during the 1943-45 period even though some 200,000 acres of new land are expected to be available for settlement between 1941 and 1945. These projects are principally the Roza in Washington, the Black Canyon in Idaho, the Deschutes in Oregon, and the Gila in Arizona. Of the area now irrigated, 110,000 acres will be supplied with supplemental water during this same period, which should provide for some increased yields or for shifts to more intensive crops in the areas affected.

In irrigation projects in Arizona there have been approximately 150,000 acres of land idle or fallow because of lack of water. With more plentiful supplies of water and under favorable price stimulus these acres are expected to be brought into production. Much of the land is part of existing farm units which can be expanded readily.

Extension of pumping projects, particularly in Arizona and California, is hazardous and should be discouraged for the most part because such expansion tends to lower ground-water supplies and increase costs.

Looking ahead to the post-war period, considered to be the years 1946 to 1950, new irrigation developments will be of greater importance than in the 1941-45 period. Projects now being settled will have become more fully developed and more productive, while a much greater acreage of new land and supplemental water supplies probably will be available. The Case-Wheeler and Water Utilization programs will assist in developing supplemental water resources.

Most of the easily developed irrigation projects have already been constructed. Those remaining for development are larger, more expensive, or of multiple-purpose type which are better adapted to public than private developments. Projects now under construction or investigation are largely handled by the Bureau of Reclamation. Estimates of that agency indicate a probable irrigation development during 1946 to 1950 of 600 to 700 thousand acres of new land and supplemental water supplies to approximately 1,300,000 acres, the latter type of development primarily in the Central Valley project of California and the Boise Valley of Idaho. Rate of development will depend upon appropriations and upon economic conditions. If public policy in the post-war period calls for a large extension of public works and the provision of settlement opportunities, it is entirely possible that more land than the above will be developed. Completion of these projects should permit the retirement of submarginal farming areas.

Clearing of cut-over lands in western Washington and Oregon will provide some new farm land, but this development will be slow unless greatly augmented funds are made available to finance this operation through some program similar to that now used in developing irrigation projects.

Because of the uncertainty of development, the timing, and the use of such projects, considerations of "long-time desirable", discussed later in various parts of this report, were made on the basis of agricultural resources now available or definitely to be made available by 1945. New developments after 1945 were ignored in such calculations of long-time desirable.

### Cost of Hired Labor

Farm wage rates may be expected to be almost 50 percent higher in 1943-45 than in 1939. Increases will be felt most in the coastal areas because of nearness to large defense industries, but the scarcity of farm labor will be felt in varying degrees wherever agricultural labor is hired.

Increased labor costs to farmers will be felt most in fruit and truck crops, and in such intensive field crops as hops and sugar beets. Higher costs will tend to discourage expansion, and in some cases may cause contraction in output, particularly in some truck crops where a delay of even a few days in obtaining labor may be disastrous.

Increased labor costs will be felt more on the large commercial farms than on family-size farms. Where facilities are available on smaller farms and the farmer's time and that of his family have not been fully utilized, it is to be expected that one or two more cows, a few more chickens, a few more crop acres, or more intensive crops will frequently be added.

With relatively higher prices in prospect for livestock and livestock products than for most crops, some shifts to livestock and away from crops requiring a great deal of hired labor may occur. Feed crops thus may be expected to compete more effectively with cash crops that require a great deal of labor. Higher wages constitute an increased stimulus to further mechanization of farm operations.

### Regional and State Estimates

Estimates of expected acreage and production, together with estimates in terms of desirable for both the 1943-45 and the long-time period are given for the entire region in table 2. This table summarizes the data for all States of the region and is referred to frequently throughout this report. Similar data for each of the seven States of the region appear in the appendix.

Table 2.- Far Western Region crop and livestock production: 1939 actual, 1943-45 expected and desirable, and long-time desirable

Item	Unit	1939 actual	1943-45		Percentage		Long-time desirable (tentative)	Pctg. change from 1939
			Estimated acreage or number & production:		1939	Desirable		
			Expected	Desirable	Ex- pected:	Desir- able:		
			(000)	(000)	(000)	(000)		
Number of farms	No. :	367.4	371.0	369.6	+ 1	+ 1	370.1	+ 1
All land in farms	Acres:	110,730	110,800	110,800	*	*	110,800	*
Cropland 3/	Acres:	25,438	26,030	25,780	+ 2	+ 1	25,480	*
Wheat	Acres:	4,462	4,805	4,425	+ 7	- 1	4,299	- 4
	Bu. :	98,620	105,909	100,209	+ 7	+ 2	98,315	*
Rye	Acres:	86	88	87	+ 2	+ 1	71	- 17
	Bu. :	975	1,004	991	+ 3	+ 2	780	- 20
Corn-all purposes	Acres:	236	266	293	+13	+24	321	+36
	Bu. :	7,198	8,251	9,153	+15	+27	10,012	+39
Oats, for grain	Acres:	925	846	826	- 9	-11	686	-26
	Bu. :	34,577	31,399	30,746	- 9	-11	25,008	-28
Barley	Acres:	1,784	2,128	2,255	+19	+26	2,058	+15
	Bu. :	49,116	62,156	63,162	+27	+35	60,510	+23
Rice	Acres:	120	138	138	+15	+15	120	0
	Bu. :	9,000	9,489	9,490	+ 5	+ 5	8,436	- 6
Flaxseed	Acres:	139	282	282	+103	+103	232	+67
	Bu. :	2,085	3,570	3,570	+71	+71	2,930	+41
Beans (dry edible)	Acres:	450	497	472	+10	+ 5	397	-12
	Cwt. :	5,532	5,691	5,699	+ 6	+ 3	4,934	-11
Hay, all exclud- ing sorghums	Acres:	5,918	6,038	6,168	+ 2	+ 4	6,504	+10
Alfalfa	Tons:	12,161	13,475	13,766	+11	+13	14,512	+19
	Acres:	2,818	3,175	3,268	+13	+16	3,535	+25
	Tons:	8,026	9,508	9,788	+18	+22	10,577	+32
Sorghums, all except sirup	Acres:	137	205	205	+50	+50	185	+35
Sugar beets 4/	Acres:	311	317	314	+ 2	+ 1	343	+10
	Tons:	4,683	4,462	4,420	- 5	- 6	4,826	+ 3
Potatoes	Acres:	302	209	299	+ 2	- 1	306	+ 1
	Bu. :	68,586	66,395	64,095	- 3	- 7	65,000	- 5
Sweetpotatoes	Acres:	10	10	10	0	0	10	0
	Bu. :	1,200	1,200	1,200	0	0	1,200	0
Apples, commercial	Bu. :	39,893	35,800	35,800	-10	-10	31,250	-22
Peaches	Bu. :	26,851	22,650	22,650	-15	-15	24,280	- 9
Oranges	Boxes:	44,924	45,650	45,650	+ 2	+ 2	40,500	-10
Grapefruit	Boxes:	4,675	4,900	4,900	+ 1	+ 1	3,800	-22
Cotton	Acres:	515	615	550	+19	+ 7	490	- 5
	Bales:	652	704	638	+ 8	- 2	565	-13
Commercial vegetables 5/	Acres:	666	686	696	+ 3	+ 5	725	+ 9
	Tons:	2,925	3,013	3,057	+ 3	+ 5	3,185	+ 9

Continued

Table 2.- Far Western Region crop and livestock production: 1939 actual, 1943-45 expected and desirable; and long-time desirable - Continued

Item	Unit	1939 actual	1943-45		Estimated acreage or number & production	: change from 1939	Percentage desirable (tentative)	Long-time desirable (tentative)	Pctg change
			1/	Ex- pected					
			2/	Desir- able					
			(000)	(000)	(000)			(000)	
Beef & veal production, live weight	Lbs.	1,388,780	1,498,195	1,540,400	+ 8	+11	1,573,500	+13	
Pork production, live weight	Lbs.	449,478	533,740	680,000	+19	+51	515,000	+15	
Lamb & mutton production, live weight	Lbs.	540,965	505,116	511,916	- 7	- 5	509,321	- 6	
Milk cows, 2-yr. old and over	No.	1,647	1,845	1,910	+12	+16	1,967	+19	
Milk production	Lbs.	9,610,000	11,569,400	12,018,600	+20	+25	11,614,300	+21	
Wool shorn	Lbs.	99,093	94,775	95,525	- 4	- 4	102,564	+ 4	
Chicken egg production	Doz.	276,751	346,350	359,250	+25	+30	338,250	+22	
Chickens raised	No.	41,409	52,414	54,062	+27	+31	48,662	+18	

\* Less than 0.5 percent.

1/ Number of farms, acres of all land in farms, and acres of cropland were obtained from the 1939 Census of Agriculture; all other data were obtained from the Agricultural Marketing Service unless otherwise noted. Production figures are for the year 1939; number of milk cows is for January 1, 1940.

2/ Does not include reclamation developments that will occur after 1945.

3/ Includes cropland harvested, crop failure, and cropland idle or fallow, but does not include plowable pasture.

4/ Acreage and production of sugar beets for the States of Oregon and Washington were obtained from the 1939 Census of Agriculture.

5/ Production estimated at 4.4 tons per acre.

### Feed Grains, Hay, and Pasture

Encouragement of livestock production must be accompanied usually by an expansion of feed production. This is particularly true of dairy-ing, but also affects expansion of beef production inasmuch as range expansion is definitely limited

#### Feed Grains

Wheat.- Feeding of surplus wheat is a desirable program, and it is expected that wheat will be fed in greater quantities to livestock. Relatively high prices for wheat, however, as a result of the loan program will discourage a large expansion in this direction unless special action is taken.

The AAA program is attempting to reduce the acreage of wheat. Waiver of total farm allotments, however, will permit use of acreage released from wheat for production of other grains or grain hay, recently classed as "soil depleting". Continuation of such modifications is desirable, at least during the emergency period.

Barley.- Increased demands for feed grains will be met in large part by increased acreages of barley. In California, some expansion into lower grade lands will occur, particularly around the edge of the Sacramento and San Joaquin Valleys, and it is expected there will be a considerable shift to barley on lands now producing grain hay. Almost one-third of the California crop is used for malting purposes. Barley for malting will continue to compete with barley for feeding, so no reduction in the acreage of malting barley is foreseen.

In Utah there has been a marked shift from oats to barley on irrigated farms. This shift will be further accelerated by an Extension program recommending the newly developed Velvex barley.

In the irrigated areas of the Pacific Northwest, barley, as well as oats and wheat, serves as a nurse crop. In these irrigated areas it is desirable that barley, because of its value as a feed grain and superior nurse crop, be substituted for oats. A large acreage of barley is grown without irrigation in the Palouse area of Washington and Idaho. Most of the anticipated increase in barley acreage in the Pacific Northwest by 1943-45 is expected to occur in this area, by replacement of wheat and some fallow acreage. Greater production of barley would tend to encourage increased numbers of livestock--a desirable long-time development for the Palouse area.

The increased plantings of barley and the shifts from other feed grains to barley are expected to increase acreage of barley by an estimated 585,000 acres over the 1935-39 average of 1,543,000 acres. This is, however, an increase of only 344,000 acres or 19 percent over 1939, as the shift to barley is already under way. It is from this acreage that a large portion of the increased demand for feed grains will be

met, particularly for concentrate feeds for dairy cows, hogs, and poultry. Increased wage rates will not be a major deterrent to this expansion because of low labor requirements per acre with the use of large-scale machinery.

Corn.- Corn for grain is confined mainly to warmer irrigated areas of the Far West and its chief competitors for land are other tilled crops. About half of the corn acreage is harvested for grain; the remainder is used for silage, or is hogged or grazed off. Development of varieties of hybrid corn, adapted to the Far West, is expected to bring some increase in acreage and yield of corn. Demand for feed for dairy cows will also increase the acreage of corn silage, but this change will be slight.

Oats.- For the Far West as a whole, oat acreage is expected to decline, the only anticipated acreage increase being in the Palouse area of Washington and Idaho. As a general rule, land now in oats would yield more if shifted to some other grain, particularly barley. This is especially true in California and the Southwest where a decline in oat acreage is expected because of the relatively low production of grain per acre of oats as compared with other grain crops.

In the Pacific Northwest, oats function as a nurse crop for alfalfa and clover to some extent, but barley will usually serve this purpose better and produce more grain. In the Willamette Valley of Oregon, and the Coastal areas of Washington and Oregon, oats compete directly with forage seed crops and with annual hays. In some of these areas it is expected that oats will decline in acreage with the increase of forage seed crops.

Grain sorghums.- An increase in grain sorghums is expected under the impetus of higher livestock prices. This increase will apply mostly to Arizona and California areas, and will occur in part through increased double cropping with barley and wheat in irrigated areas. Barley and wheat seeded in the fall and followed by grain sorghums in May of the following year will mean some increased drain on soil fertility, but if used in a rotation with alfalfa the losses will not be noticeable.

#### Hay

All hay acreage in 1943-45 is estimated at 6,038,000 acres, an increase of 1.6 percent over 1935-39, while estimates of production indicate an increase of 8.5 percent. Since alfalfa is expected to constitute a larger proportion of the total, the average quality of hay in 1943-45 will be better and production will increase.

Alfalfa.- The most important hay in the region is alfalfa, which accounted for 46 percent of the total hay acreage of 5,940,000 acres in the 1935-39 period, and about 64 percent of the total hay production in the same period. With the estimated increased prices for livestock and livestock products, it is evident that alfalfa acreage will be ex-

expanded considerably. This increase in acreage will come from new lands, and a shift from wild hay resulting from a better use of water.

Increased yield and production is also expected, owing to the use of supplemental water. The Southwest has experienced a year of plentiful water supply and this will result in better yields until at least 1942. If there should be a favorable water situation in the period 1943-45, it would, of course, mean an increase in the yield of alfalfa throughout the region, and it would permit a greater expansion of alfalfa acreage than that estimated.

Increased acreage of alfalfa is a desirable long-time adjustment. However, past experience indicates that alfalfa stands often are allowed to remain too long, and yields soon decline. More attention to alfalfa in crop rotations and plowing it up more frequently will help to offset the decline in yield which some irrigated lands have experienced in recent years.

Grain hay.- The acreage of grain hay which varies with precipitation in many areas has been declining in recent years and this trend will continue. Better prices for high-quality hay and increased demand for feed grains, especially barley, will account for the reduction of grain hay. The acreage of grain hay averaged 1,447,000 acres during the 1935-39 period. It is estimated that the acreage during 1943-45 will be 1,024,000 acres, a decrease of 29 percent.

Other feeds.- Crop byproducts such as beet pulp, cull potatoes, citrus pulp, cottonseed meal and numerous others, although a minor part of the total feed supply of the region, assume considerable importance in some areas, particularly California. The quantity of these feeds fed to livestock is not known, but undoubtedly byproducts will be fed to the extent produced and will tend to alleviate the heavy demand for feeds in California during 1943-45.

#### Pastures

It is unlikely that the acreage of irrigated pasture will be greatly increased because there will be an increased demand for hay and feed grains. However, the increased prices for livestock and livestock products should draw more attention to increasing production on irrigated pastures. This is highly desirable, as the profit-making possibilities of pastures have never been fully realized, especially in the range area. Practices that are being developed to increase production include plowing and reseeding, use of ladino clover, spreading droppings, application of fertilizers, and rotation grazing.

In the Pacific Northwest and Intermountain Regions the development of dry-land pastures is an important adjustment which has been gaining ground in recent years. Improvement of perennial grass pastures with such species as crested wheat grass foreshadows a genuine advancement in the livestock-grass economy of this region.

Use of grain pastures to alleviate overgrazed conditions on spring-fall ranges is another adjustment which promises to balance better the livestock-feed relationships in the range areas of the West.

### Range Livestock and Adjustments in the Range Areas

#### General Situation

Western rangelands in general are an inflexible resource from the standpoint of man's ability to change the use or to increase quickly forage production on them, though forage production fluctuates widely with changing moisture conditions. For the most part, ranges of the West are now stocked to approximate capacity. There are limited areas where water development and other range-improvement facilities would make available more forage, but these are of minor importance. Some increase is possible through better use of interdependent seasonal ranges.

The overstocking of ranges and resultant forage depletion that occurred during the 1915-18 period contributed greatly to the troubles encountered by the range livestock industry during the 1920's. Another factor which contributed to the distress in this area during the post-war period was overcapitalization of livestock and land. Many ranchers who bought land and livestock during the 1915-18 period were unable to meet their obligations in the post-war period of low prices.

Livestock men are aware of the dangers of overcapitalization and overstocking of the range and probably will attempt to avoid a repetition of these mistakes. One of the most significant trends in the range-livestock region is the growing awareness of the advantages of proper stocking, or even conservative stocking of the range. The consensus among producers is that rapid expansion of livestock numbers such as occurred in the 1915-18 period, should be avoided.

Beef cattle.— About one-half of all cows in the Far West are beef cows. In the strictly range States, such as Nevada and Arizona, beef cows outnumber milk cows by 8 or 10 to 1, whereas in Washington there is only one beef cow to 4 or 5 milk cows (table 3). Beef cows outnumber milk cows only in Arizona, Nevada, and Utah, but even in California, Idaho, Oregon and Washington there are extensive range areas where beef cattle predominate, usually in the lower-rainfall areas east of the Cascade and Sierra ranges and outside the major irrigated areas.

Beef cattle do not compete directly with dairy cattle for range but offer some competition with dairy cattle for hay, especially in areas where winter feeding is necessary. Most of the beef cattle in the range areas are dependent on mountain ranges for summer feed. Recent increases, confined mostly to the Pacific Northwest, have been partly the result of a shift from range sheep induced by the operations of the Grazing Service.

Table 3.- Number of beef cows, milk cows, and all cattle excluding dairy cows, in the seven Far Western States, 1925 to 1940

State	Average		1939	1940	1943-45	
	: 1925-29:	: 1930-34:		: 1/	: expected	
(thousands)						
<u>All cattle, excluding dairy cows</u>						
Arizona	: 925	772	823	808	815	
California	: 1,413	1,374	1,605	1,561	1,487	
Idaho	: 444	497	564	547	582	
Nevada	: 389	311	332	339	343	
Oregon	: 517	576	687	720	754	
Utah	: 390	364	324	328	332	
Washington	: 281	337	427	449	481	
Region	: 4,359	4,231	4,762	4,752	4,794	
<u>Beef cows</u>						
Arizona	: 527	598	457	473	459	
California	: 423	383	467	456	440	
Idaho	: 129	134	161	150	161	
Nevada	: 160	127	142	144	148	
Oregon	: 170	176	228	239	250	
Utah	: 152	129	109	105	109	
Washington	: 50	61	75	80	92	
Region	: 1,611	1,408	1,639	1,647	1,659	
<u>Dairy cows</u>						
Arizona	: 35	42	47	47	49	
California	: 619	664	659	667	674	
Idaho	: 167	197	195	198	200	
Nevada	: 20	21	21	21	22	
Oregon	: 216	256	264	263	258	
Utah	: 95	111	100	100	100	
Washington	: 270	309	338	345	345	
Region	: 1,422	1,600	1,624	1,641	1,647	

1/ Preliminary.

Cattle, excluding dairy cows, reached a peak of 4,953,000 head in 1937 and declined about 4 percent by 1939. The number of beef cows in the Far West is only slightly greater than in the 1925-29 period. Milk cow numbers on the contrary have increased substantially since that time.

Sheep.- Sheep numbers in 1937 and 1938 were about the same as in the early 1930's and somewhat higher than during the 1925-29 period. Since 1938, numbers have declined, and in 1940 they were lower than in any of the last 15 years (table 4). The decline occurred in some States much earlier than in others, notably in Arizona and Nevada. In those States there has been a downward trend during the entire 1925-40 period, partially as a result of reduced range capacities and partly because of replacement of sheep by cattle. Increasingly difficult trailing problems, created by institutional as well as natural factors, have operated against the range-sheep producer in many range areas. In other States, however, such as California, sheep numbers have been maintained or increased until recently.

Table 4.- Number of all sheep on hand January 1 in the seven Far Western States, 1925-1940

State	Average			1939	1940	1943-45
	: 1925-29	: 1930-34	: 1935-39			
(thousands)						
Arizona	: 1,141	1,049	865	833	755	750
California 2/	: 2,956	3,158	3,551	3,658	3,484	3,056
Idaho	: 2,034	2,335	2,265	2,089	2,019	2,200
Nevada	: 1,176	1,067	851	829	791	790
Oregon	: 2,259	2,560	2,280	2,120	1,985	2,000
Utah	: 2,595	2,795	2,588	2,521	2,482	2,588
Washington	: 621	729	708	682	655	690
Region	: 12,832	13,693	13,108	12,732	12,171	12,074
	:					

1/ Preliminary.

2/ Agricultural Marketing Service revisions being made may reduce estimates by 10 to 15 percent in latter years.

#### Expected Production in 1943-45

The impetus of higher prices during the 1943-45 period is expected to slow down or halt the declining trend in sheep numbers and to slightly increase the number of beef animals on the range. The major increase in meat production from range areas will come through heavier feeding of cultivated feeds to beef cattle in the scattered irrigated areas. Increased utilization of byproduct feeds will also contribute to increased

beef production. No increased feeding of range sheep is expected, as they cannot compete advantageously with dairy and beef cattle for cultivated feed or irrigated pastures.

In Utah, Nevada, southeastern Oregon, and similar areas, where production is crowding the present feed and range resources, the production maximum may soon be reached. In other States where more cultivated forage is available, relatively greater increases in production can be expected. However, competition of other types of livestock with beef cattle will limit beef production to moderate increases.

Beef-cattle numbers are expected to increase somewhat on the wheat farms of Washington, Oregon, and Idaho. Such an expansion is particularly desirable and should be encouraged since it will contribute to the solution of the problem of the soft-wheat surplus. The soil conservation aspect of such an adjustment is also desirable--some grain being displaced by perennial grass pastures.

The seven Western States had an average of 6,386,000 head of all cattle during the 1935-39 period with a production of 1,356 million pounds of meat. It is estimated that the number of all cattle in the 1943-45 period will average 6,932,000 with a meat production of 1,498 million pounds, an increase in meat production of about 10 percent from the 1935-39 period.<sup>2/</sup>

Cattle numbers on January 1, 1941 were about midway between the 1935-39 and the 1943-45 expected numbers. This increase was brought about by higher prices for beef during the recent past. Further increases may be expected to meet with increasing competition for feed from other types of livestock.

The seven Far Western States had an average of about 13 million sheep during the 1935-39 period with a production of 520 million pounds of meat and 94 million pounds of wool. It is estimated that during the 1943-45 period there will be an average of about 12 million head with a production of 505 million pounds of meat and 95 million pounds of wool, a decrease of 8 percent from the 1935-39 average numbers, but about the same as in 1940 and 1941.

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<sup>2/</sup> 1942 farm defense goals for beef and veal marketings call for a heavy increase over previous years, on the supposition that inventory numbers have increased materially during the past 3 or 4 years. It is believed that ranchers should take advantage of present high prices and protect themselves against forage supplies lower than the present unusually favorable range conditions, and against possible post-defense price declines.

### Desirable Adjustments in the Range Areas

During the 1943-45 period.-- Generally, rangelands have no alternative uses and are not amenable to the short-time adjustments which can be obtained on croplands. Croplands used in conjunction with range operations have some alternative uses, but even these uses are largely complementary to the use of the rangelands. When climatic adversity causes a reduction in range forage, the necessary adjustment falls partially on the croplands, where more feeds must be produced and hay acreage converted to irrigated pasture.

Reduced grazing capacity in many areas can be accounted for by unwise seasonal use. Particularly is this true in areas where spring-fall and summer ranges do not offer sufficient grazing capacity to maintain a balance with the winter range and feed supplies. Downward adjustment of livestock numbers may not be necessary if adjustments are made toward a longer feeding period for livestock, increased use of irrigated pastures, and the substitution of grain pasture for spring range.

Several adjustments that are now occurring are aimed at protection of the rangelands and a greater dependence on the croplands to obtain the production increases, as follows:

- (1) Increased interest and activity in feed production and feeding for greater meat production.
- (2) Putting young animals on feed earlier to take advantage of their possibilities for faster growth, thus allowing more pasture and range for breeding herds and flocks.
- (3) Better feeding and care of breeding herds and flocks.

An extension of the above practices is desirable from the standpoint of meeting defense needs as well as maintaining range resources.

The pressure for range can be materially reduced by the improvement of tame pastures. Fertilization, spreading of droppings on tame pastures, and rotation grazing have been neglected in many areas.

Improvement of animal nutrition will require some adjustments in the range areas. Low crops of calves and lambs, reduced net turnoff, and increased winter death losses may be as much due to poor quality as to insufficient quantity of feed and forage. Recent research indicates that lack of certain vitamins in dry feed, principally poor hay, causes sterility, low resistance to diseases (Bangs disease is one example), and general unthriftiness. Where necessary, the production or purchase of the proper quality feeds will contribute to more efficient livestock production.

For the small range-livestock producers, it generally is possible to expand only by the purchase of a nearby unit or portions of a unit. If the location and resources are favorable, adjustments may advantageously be made to a more intensive type of agriculture, such as dairying. But alternatives are limited in the range area.

Use of credit for expansion of operations should be made with caution. During the 1915-19 period, most producers became over-extended in credit. The problem was aggravated by the depression years. It is extremely desirable that producers take advantage of favorable income opportunities by reducing debts and improving their present plants. Increased efficiency in production will bring more lasting benefit than merely increasing the numbers of livestock.

Many adjustments in the range area will depend upon the policies of the public agencies that administer rangelands. The Federal range is now going through a period of change in which attempts are being made to apportion range resources on a more equitable basis. During the next few years of expected higher prices for cattle and sheep it may be anticipated that increased pressure for larger permits on National Forest and Grazing District lands will be made. It is to be hoped that public administrators will continue to resist such pressure, as any overexpansion in permitted grazing will be highly hazardous and may cause loss to operators later through enforced reductions and liquidations such as occurred after World War I.

Longer Time Adjustments.— Climate has always been the principal risk factor in range-livestock production. Adjustment in livestock numbers to meet fluctuating forage supplies generally has been forced and sometimes has been disastrous. Occasional necessary reductions of numbers often have been delayed beyond the point of safety because of undue optimism as to forage loss. An appraisal of the minimum forage production to be expected, should be considered when stocking the range.

Maintenance of range forage reserves through conservative stocking and stacked-hay reserves are effective methods of insuring against occasional critical periods of low forage production. There is a practical limit to such reserves, however, because of losses of nutrition in the reserve supply itself. The most effective insurance against fluctuating forage supplies is the creation of financial reserves during periods of favorable prices so that curtailment of ranch operations during critical periods will not cause bankruptcy.

Range improvements, such as water development and fencing to improve the distribution of animals, are long-time desirable programs. The labor, materials, and expenditures for such improvements, however, probably can be used to better advantage after the present national defense emergency has passed. Conservation-works programs may be useful in alleviating post-defense unemployment problems. Such improvements would permit of some increase in livestock numbers on the range, particularly in undeveloped areas.

In range areas, taxes on private lands and grazing fees on public lands need adjustment. In general, it is believed that taxes are too high and grazing fees too low in relation to productivity. This hampers or prevents desirable adjustments in the use of land. Changes in these two types of land charges should come about gradually. Adjustment in land charges or land costs will, of course, have an effect on many other aspects of the range-livestock area. A much closer complementary re-

lationship between public and private lands will be gained. Public range administration will be simplified and the element of subsidy will be eliminated.

Accomplishment of the foregoing long-time objectives will permit greater and more effective utilization of forage resources and should result in greater turnoff of meat and wool from the ranges, with corresponding increases in ranch incomes and greater stability in the social organization of the region, but this program cannot and should not be accomplished rapidly.

#### Adjustments in Dairy, Poultry, and Hogs

##### Dairy

The Situation.— The number of dairy cows and heifers, 2 years old and over, on January 1, 1940 was 1,647,000 of which 41 percent were in California, 21 percent in Washington, 16 percent in Oregon, 12 percent in Idaho, and 6 percent in Utah (table 3, page 15). The number of dairy cows in Arizona and Nevada combined amounted to only 4 percent of the total for the region. Dairy cows are kept on many general farms throughout the region, but commercial production of dairy products originates chiefly near population centers where cows are kept for the production of market milk and in irrigated areas where manufacturing milk mainly is produced.

There has been a steady increase in the number of dairy cows in the Far Western Region as a whole since the depression of the 1930's. This increase, however, has not been sufficient to change the region from a deficit to a surplus area with regard to dairy products. Except in Oregon where the number of dairy cows on January 1, 1940 was slightly smaller than that for the five-year period 1935-39, all States of the region reported as many or more dairy cows in 1940 as during the 1935-39 period.

Milk production in the Far Western region, because of a considerable increase in production per cow, has increased faster in recent years than the number of dairy cows. Even in Oregon total milk production in 1939 exceeded the average production during 1935-39. The constant increase in milk production per cow has been achieved not only by better management of dairy herds, but also to a considerable extent by better pastures, particularly in irrigated areas. In California, as well as in Oregon and Washington, a shift from manufactured milk to market milk is taking place in many areas in the vicinity of consuming centers, training camps, and defense industry. In areas distant from consuming centers a shift from the sale of cream to the sale of whole milk for manufacturing is apparent. This shift probably will affect the hog and poultry enterprises, as less skim milk will be available on farms for the raising of pigs and chickens. Total milk production in 1939 was 9,610 million pounds, which is more than 3 percent higher than the average production during the five years 1935-39.

Expected 1943-45 Production.—The number of dairy cows within the region is expected to increase to 1,845,000 during the emergency period, or about 12 percent above that on January 1, 1940. A greater percentage increase in dairy cows is expected in the general dairy areas than in specialized dairy farm areas which are already having difficulty in obtaining qualified labor. Dairying fits well into diversified farming of irrigated areas and will show a considerable increase where cash-crop production has predominated in the past. Expansion during the emergency period will take place chiefly by increasing dairy herds to the full capacity of present facilities and feed supplies and by accelerating present trends toward greater dairy production in irrigated areas.

Favorable prices for dairy products will be a strong inducement to heavier feeding and further improvements in pastures so that production is expected to increase more than numbers. Greater efficiency in dairy production in response to favorable prices will take place chiefly in those areas where feed grains are readily available and where considerable improvements in pastures have already been made or are under way, chiefly in Oregon, Washington, Idaho and Utah. In the Southwest no considerable change in milk production per cow is expected, partly because output per cow is already high, but also because a considerable increase in numbers will tend to lower average production.

In California, where approximately 45 percent of the milk supply of the region originates, dairy cows in the market milk areas will be increased in numbers in response to greater demand for dairy products. Farmers in these areas, particularly near training camps, should expand with caution and without going into debt unduly, as the end of the emergency period may cause serious dislocations in their market. Major increases will occur in the manufacturing milk areas of California. Here feed and labor costs are lower, the size of the herd is smaller, and dairy cows will offer stronger competition for available feed, tending to discourage expansion of sheep and beef cattle enterprises. Larger numbers and heavier feeding will mean a steady increase in the demand for feed grains, hay, and pastures in this State, which can only in part be met by increased production within the State. Larger quantities of feed grains as well as hay are expected to be shipped in from surrounding States in the future.

In the Northwest the years 1940 and 1941 brought marked increases in the number of milk cows and in dairy heifers. In the coastal areas the nearness to consuming centers and increasing population due to defense activities will continue to give a great impetus to dairy production. In the irrigated valley of the interior, present dairy herds will be increased by the addition of a few cows to utilize present facilities to capacity. On the other hand, current shifts from the production of cash crops to dairying will be speeded up not only because of greater profitability of a more diversified farming, but also because the building up and maintenance of soil fertility makes this desirable.

In the region as a whole, milk production will not be sufficient to supply the constantly rising demand. It is expected to reach about 11.6 billion pounds during the emergency period, or about 24 percent

more than the production during the 5-year period 1935-39. Further emphasis of the need for milk in the defense program may stimulate an even greater increase than that indicated.

Desirable Adjustments.- Several factors combine to make it desirable that dairy production be increased still further than is expected during the emergency period. Above all, the fact that the region is a deficit area and a considerable increase, except possibly near temporary consuming centers, will not cause major readjustments after the emergency period, makes an expansion in dairying desirable from the short as well as long time point of view. Furthermore, labor on dairy herds is distributed throughout the year and well adapted to the aptitude and capacity of family labor.

Dairy cows make efficient use of alfalfa hay and pasture, provide manure to maintain soil fertility and generally induce farmers to adopt better crop practices. In addition to the expansion in dairying, continued efforts should be made to improve dairy herds by assistance to dairy-herd improvement associations. Development and management of improved pastures and adoption of better feeding and management practices long advocated by dairy specialists form an important part of a program of increased dairy production in this region.

It is also recommended that the transfer of calves from dry-lot dairies near cities to country areas for raising to dairy cows be facilitated. Greater attention should be given to the feeding of wheat in the dairy ration, thereby helping to solve the problem of surplus wheat. Experiments indicate that up to 50 percent of the dairy ration can consist of wheat with good results.

In view of the need for larger milk production and the possibilities of expansion in most areas within the region, it is desirable that the number of dairy cows be increased somewhat more than is expected. Milk production following a further improvement in production per cow, could well reach about 12 billion pounds during the 1943-45 period. This is about 4 percent above the expected production and would involve a 10 percent increase in the output per cow over the average for the 1935-39 period.

Nearly all of the desirable increase can be obtained without any great expansion in capital investments. In most cases utilization of present facilities to full capacity and a continuation of present trends toward increased dairy production will permit farmers to take full advantage of favorable prices. Where large capital investments are necessary, farmers should proceed with caution.

Long-time considerations.- As long as the region is on a deficit basis and feed supplies are readily available, considerable benefits will result in the long run from the addition of a dairy enterprise to the farm in times of favorable prices. However, it is expected that prices for dairy products will be less favorable in the post-war period than they are at present and some readjustments will have to be made.

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Some areas will find it difficult to maintain the larger numbers of dairy cows or continue the heavy feeding of concentrates. Others will be able to expand further, even with lower prices, on the basis of locally grown feed and the advantages of further improvement in pastures and crop rotations.

A considerable increase in the number of dairy cows, therefore, is desirable for the region as a whole. In the Southwestern States no great increases are possible except where new irrigation projects have been developed. In the Northwestern States irrigation projects now under construction will permit a considerable increase in dairy production. Furthermore, increased livestock production in areas where cash crops predominate will place agriculture on a more stable basis and reduce risk.

In view of lower prices anticipated during the post-war period, it may not be profitable for the farmer to continue the heavy feeding of concentrates to the extent that is expected and desirable during the emergency period. For this reason, a decline in the output per cow is likely. Total milk production, however, because of larger numbers of dairy cows, should be greater than the volume expected during 1943-45.

### Poultry

Present Situation.— The most important chicken-producing State within the region is California, raising approximately one-half of all the chickens in the seven States. Washington, Oregon, Idaho, and Utah follow, in the order named. The production in Arizona and Nevada is small and only locally significant. Approximately 38 million chickens were raised in the region annually during the period 1935-39 and 41 million during 1939.

The major commercial producing areas are located in the three Pacific Coast States, close to population centers along the coast. In these areas production is highly specialized and the bird population consists of about 85 percent of white leghorn chickens, indicating the emphasis that is being put on egg production rather than meat. As most of the poultry producers in the areas rely upon commercial feeds, most of which are shipped in, they have not found it profitable in the past to raise chickens for meat nor to save the male chicks. Poultry production further inland, and particularly in Idaho and Utah, is not so highly specialized. There the majority of the flocks are small and use the feed grown on the farms rather than relying predominantly upon commercial feeds.

With increased consumer demand during recent years, there has been a gradual shift to the production of poultry meat which is accomplished in most cases by saving male birds of laying breeds rather than by raising meat breeds. However, in California where the greatest demand for poultry meat is found, inshipsments of live and dressed poultry, chiefly from Nebraska, still constitute a large part of the poultry meat consumption.

Egg production in the region averaged about 305 million dozens during the period 1935-39 and 277 million dozens in 1939. Except for the slight shift to the raising of meat birds in recent years, egg production has followed closely the bird population. During the 1920's and early 1930's the Pacific Coast States shipped considerable quantities of eggs to Eastern markets. Declining prices, coupled with high transcontinental freight rates, have made it more difficult for Western producers to compete with increasing Eastern production. Shipments from the Northwestern States to Eastern markets still represent an important outlet. In California, however, inshipments from surrounding States, Kansas, and Texas are more than twice as large as outshipments.

Expected Production, 1943-45.—With increased demand during the defense period, a considerable increase in the number of chickens raised as well as in egg production is expected. The number of chickens raised is estimated to reach over 52 million birds or about 27 percent more than the number in 1939. Egg production will be about 346 million dozens or 25 percent more than the volume produced in 1939. The proportionately greater increase in the number of chickens will be obtained by a continuation of the trend toward raising more poultry for meat. In all States of the region hatchings during 1941 have been considerably greater than in the past. Chicken houses, which were left vacant during the depression years, are being filled and in some cases new ones added. However, many vacant buildings are so deteriorated that they cannot be used without considerable expenditure for repairs.

In California, feed supplies for poultry are less plentiful than in some other States of the region. The most important grains now used for poultry are barley and corn; the latter shipped in from the Middle-west. Expected increases in dairy and hog numbers will offer strong competition for barley. The anticipated scarcity of feed would be alleviated if surplus Northwest wheat were available to poultry producers in this State at a feed price comparable with that of barley (see page 30 for discussion of the use of soft wheat for feed). No significant change in egg production per hen is anticipated because of a somewhat limited supply of protein concentrates for poultry feed. Greater reliance upon grain in the feed rations will tend to decrease rates of production. Another factor which is likely to prevent an expansion in poultry production to a level somewhat near that obtained in 1930 is labor expenses. Commercial poultry farms are close to population centers where generally higher wages are paid and qualified labor is difficult to obtain.

In Oregon and Washington, conditions are similar to those in California except that the poultry producers in those States rely more upon wheat as a feed grain and will not face a shortage. However, feed prices during the emergency period may be high. This will put the poultry producer who raises part or all of his own feed in a relatively more favorable position than the one who must buy all feeds. A considerable increase, therefore, is expected on general farms rather than on specialized poultry farms, particularly in eastern Washington, north-eastern Oregon, Idaho, and Utah. Feed supplies in these areas are plentiful and small flocks can be added readily to the farm without large capital expenditures.

Desirable Production During the Defense Period. - In view of present high prices for poultry products and the rapid response of producers in most areas, it appears desirable that production be increased further than is expected.

There seems to be room for greater poultry production on general farms and to a certain extent in areas where locally grown soft wheat could be fed extensively. Comparatively small investments would be needed to expand production in these areas for a comparatively short period, but high prices for feed are preventing production from reaching the desired level.

Growers of kinds of fruit that are adversely affected by the loss of export markets who, for the post-war period, hold little hope of regaining their former outlets, and whose operating units are too small to shift to a more diversified type of farming, may well investigate the possibilities of shifting part of their resources to poultry production during a period of favorable prices in the immediate future.

Long-time Considerations. - While some particularly favored areas might expand materially to good advantage, increased competition of egg producers in the Northeastern States, high freight rates, and smaller price premiums for Pacific Coast eggs than formerly are factors that suggest caution in attempting to expand egg production to the level existing about 1930. Furthermore, the region may witness some reduction in population due to the cessation of part of the defense activities. Although the demand for poultry products within the region is expected to be greater than the 1939 level, it cannot be expected to be maintained at the 1943-45 level. A contraction in poultry production, therefore, will be necessary. Expansion during the emergency period should be made carefully and without great capital investments.

The number of chickens raised and the egg production should be somewhat larger than that in 1939. If there is a return to lower prices it will not seem to be desirable from the viewpoint of the poultry producer to continue the production of meat to the extent to which it will be profitable during the defense period.

#### Hogs

The Situation. - Hog production in the Far Western region is not sufficient to supply the demand within the region. It has been estimated that there is a deficit of approximately 2.5 million hogs. The number of hogs on farms on January 1, 1940 was 1,940,000, which was 29 percent above the average number for the years 1935-39. Pork production was 354 million pounds during the five-year period 1935-39, and 449 million pounds for the year 1939. Since that year, hog numbers and pork production have decreased somewhat, but because of favorable prices this downward trend has been interrupted and hog numbers are again increasing.

California is the major hog-producing State in the Far West, followed by Idaho, Washington, Oregon, Utah, Arizona, and Nevada. About one-third of the hogs raised in California are garbage-fed, near population centers. In other parts of this State, as well as in the other States of the region, hogs generally utilize byproducts from dairying and general farming.

Expected Production.- During the period 1943-45 the average annual pork production is expected to be 534 million pounds or 19 percent larger than in 1939 and 51 percent above the average production during the five-year period 1935-39. In California, the increase in pork production will occur chiefly from barley-fed hogs. A slight increase in production is expected in the number of garbage-fed hogs. Proposals for legislation limiting the feeding of garbage to hogs, however, may affect pork production adversely. In Nevada, Arizona, and Utah only a slight increase in pork production over 1939 is expected. Production in these States is relatively small, and lack of suitable feed and pastures will prevent a major increase in production during 1943-45. In Oregon, Washington, and Idaho combined, pork production is expected to increase by about one-fourth over the production in 1939. With a favorable price relationship, the large supply of soft wheat available in these States could partly be used to increase production of pork. Favorable prices will also induce farmers in the irrigated areas of southern Idaho, central Washington, and western Oregon to increase their number of hogs, but this increase will be limited by the feed supply and the competition offered by other types of livestock.

Desirable Situation.- The desirable production during the period 1943-45, because of the limitation of feed supply, coincides with the expected production in California, Arizona, Nevada, and Utah. In the three Northwest States of Oregon, Washington, and Idaho, however, it would seem desirable that pork production during the emergency period be increased still further than is expected. Relatively high prices for soft wheat are now preventing an increase which otherwise would be feasible. Present wheat-corn price relationships make feeding of wheat relatively unprofitable compared with corn, and even though wheat may theoretically be fed profitably, little shift is likely without special inducements (see page 30 for further discussion). For the region as a whole, it is desirable that pork production during the emergency period be increased to somewhat more than 50 percent of the production in 1939.

Pork production during the post-war period in the Far West should be at a level somewhat higher than in 1939 but considerably below that of the defense period. The increase over 1939 pork production should come largely from the wheat surplus States of Oregon and Washington and Idaho, with the greatest emphasis on Oregon and Washington where the wheat surplus is largest. Hogs, more than any other type of livestock, offer a ready means of disposing of large quantities of surplus wheat. In the one-crop wheat areas of the Northwest, a hog enterprise on many farms permits the diversification of agricultural production and encourages a shift to a conservation-type of farming. On the other hand, the deficit of hogs in the region and an expected increase in population will provide a market for more pork than can be produced.

Possibilities of expansion in pork production for the long-time period are definitely limited in California, Arizona, Nevada, and Utah, and production in these States should not vary greatly from that during the year 1939 which was approximately 28 percent above the production during the period 1935-39. Downward adjustments in hog production do not involve losses in investments comparable with adjustments in some other types of livestock.

#### Adjustments in the Pacific Northwest Wheat Region

The Situation.- The Pacific Northwest has long been an important producer of wheat, particularly of the soft varieties, much of which normally has been exported from the region. Loss of export markets adversely affected the wheat growers in the 1930's, and only by payment of export subsidies during recent years has it been possible to move wheat out of the Northwest to export markets. This dependence on subsidy is cause for serious concern among those connected with wheat production and marketing in that region.

The major wheat country of Washington, Oregon, and Idaho, excludes wheat areas in western Washington, western Oregon, and those in southern Idaho, and comprises approximately three-fourths of the total wheat acreage in the three States. Marked differences exist within this region with regard to topography, altitude, soil, precipitation, growing season, farming practices, varieties of wheat grown, and alternative opportunities, although alternate wheat and summer fallow is the prevailing farming system. Because of these differences, the Pacific Northwest wheat region is divided into four areas, namely the Palouse<sup>3/</sup>, the South Snake River<sup>4/</sup>, the Big Bend<sup>5/</sup>, and the Mid-Columbia<sup>6/</sup>.

The average harvested acreage of wheat in the three Pacific Northwest States was 4,107,000 acres during the period 1935 to 1939, yielding an average of 92,658,000 bushels. The total acreage in the Palouse, South Snake River, Big Bend and Mid-Columbia areas amounted to 3,079,000 acres, yielding 68,523,000 bushels or approximately 75 percent of the acreage and production respectively in the three States. In western Washington and Oregon, as well as in the eastern irrigated valleys, wheat is grown in rotation with other crops. The volume of production is considerable, but only small quantities enter commercial channels.

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<sup>3/</sup> Includes Spokane and Whitman Counties in Washington, and Benewah, Clearwater, Idaho, Kootenai, Latah, Lewis, Nez Perce, and Shoshone Counties in Idaho.

<sup>4/</sup> Includes Asotin, Columbia, Garfield, and Walla Walla in Washington and Umatilla, Union, and Wallowa in Oregon.

<sup>5/</sup> Includes Adams, Douglas, Franklin, Grant, and Lincoln Counties in Washington.

<sup>6/</sup> Includes Benton and Klickitat Counties in Washington and Gillman, Jefferson, Morrow, Sherman, Wasco, and Wheeler Counties in Oregon.

The economic position of Pacific Northwest wheat is distinctly influenced by the types of wheat produced there compared with the market outlets for these respective types. Production of wheat by types in the major wheat region during the period 1935-39 was about as follows: Hard red spring, one million bushels; hard red winter, 16 million bushels; hard white, 16 million bushels; soft red winter, 6 million bushels; soft white, 12 million bushels; White Club and Western White, 13 million bushels; and 4 million bushels of mixed wheat. The 25 million bushels of soft white wheats account for the major portion of the regional surplus.

During the most recent 5-year period the carry-over of wheat on July 1 has amounted to approximately 18 million bushels, varying from about 10 million in 1937 to 25 million in 1941. The yearly supply of wheat in the Pacific Northwest is further increased by in-shipments of approximately 4 million bushels of Montana wheat, bringing the total average supply to about 97 million bushels during the 5-year period 1936-37 to 1940-41 (table 5).

Table 5.- Supply and distribution of wheat and flour in terms of wheat in the Pacific Northwest 1/

Crop year	: Total supply <u>2/</u>	Disposition					: Carry-over : June 30	
		: Water shipments to: : Other : domestic : Exports :						
		: California	: Gulf and : Atlantic	: use <u>3/</u> :				
	: 1,000	1,000	1,000	1,000	1,000	1,000	1,000	
	: bushels	bushels	bushels	bushels	bushels	bushels	bushels	
1931-32 to :								
1935-36 av. :	95,540	12,295	12,386	34,413	15,082	21,364		
1936-37	93,645	8,794	16,138	53,022	5,452	10,239		
1937-38	95,531	4,437	8,461	44,090	22,325	16,218		
1938-39	111,675	7,548	5,683	36,005	43,125	19,314		
1939-40	92,768	5,306	9,034	38,793	21,860	17,775		
1940-41	91,761	4/9,800	4/3,000	4/29,961	4/24,000	4/25,000		

1/ Washington, Oregon, and northern Idaho.

2/ Includes production, carry-over July 1, and Montana arrivals.

3/ Remainder; includes food, seed, and feed in Pacific Northwest and shipments to Hawaii and Alaska and all rail East.

4/ Approximation.

Bureau of Agricultural Economics. Compiled from: "The Wheat Situation", June 1941.

Estimates of the disposition of the Pacific Northwest wheat crop indicate that about 30 million bushels are used within the region as food, feed, or seed and for shipment to Hawaii and Alaska. The surplus production has been disposed of by wheat and flour shipments to points outside the region, almost entirely by water shipment. During the last

5-year period domestic water shipments to California, Gulf, and Atlantic ports averaged 16 million bushels of wheat or its equivalent in flour, and foreign exports averaged about 23 million bushels.

Domestic water shipments during the last 5 years were only two-thirds the volume in the previous 5-year period. Exports to foreign countries, however, averaged about 8 million bushels greater, largely because of a more consistent subsidy policy during the recent period.

Expected 1943-45 Production.—Production of Pacific Northwest wheat during the period 1943-45 will be influenced chiefly by governmental programs and possible alternative uses of the land. High prices, favorable moisture conditions, and a dearth of possible alternatives will magnify the efforts required to bring wheat acreages in line with reduced allotments. This will be especially true in the Mid Columbia and the Big Bend Areas where alternatives to wheat are limited and wheat acreages tend to expand with increasing prices.

Increasingly Difficult Surplus Problem.—Prospective declines in export markets, coupled with an increasingly tight shipping situation even for domestic shipments, may dictate the use or storage within the region itself of most wheat produced in the Pacific Northwest during the next few years. On the assumption that domestic water shipments might be reduced by one-half during the emergency period and exports reduced by three-fourths, besides a reduction in rail shipments, an additional 25 to 30 million bushels of wheat per year may be forced into storage or consumption within the region. Some extremely critical situations of storage will probably develop unless drastic shifts occur from wheat to other crops, or a drastic increase in consumption within the region is encouraged. Storage space was reported to be completely filled in late August 1941, with from 20 to 25 percent of the crop as yet unharvested. Reduced shipments for even 1 year under such a situation will provide the 1942 wheat crop with only a fraction of the necessary storage space.

Emergency Considerations.—In view of the prospective heavy demand for livestock and livestock products during the next few years, it would seem to be desirable to undertake a positive program, pointed toward obtaining a marked shift in the use of soft white wheat which is suitable only to a minor degree for milling purposes within the region.

Use of wheat for human consumption is relatively inelastic, and in any event the population of the Pacific Northwest is insufficient to consume more than a minor part of total production. Increased use of soft wheat for livestock feed apparently is the major possibility for disposition of wheat during the next few years, unless some unforeseeable export outlet should occur. Possibilities for increasing wheat feeding are:

(1) Expansion of the hog enterprise to consume more wheat on farms where it is grown. Greatest possibilities for this are in the more humid parts of the wheat region, such as the Palouse country of Washington and Idaho. Feeding surplus wheat to hogs in irrigated areas likewise has

promising possibilities, because of good pastures and knowledge of live-stock techniques by the irrigation farmers.

Cost studies indicate that wheat can profitably be fed to hogs when the price of 100 pounds of live weight hogs is above the price of 10-1/2 bushels of wheat. When such price relationships exist an opportunity would exist for disposing of wheat more profitably through feeding than by direct sale. Such a shift, even of major proportions, would be desirable, as it would permit the land to produce the crop for which it is best suited, reduce the surplus of market wheat, help fill the deficit in the production of pork and pork products in the Far West, and contribute to the national defense program.

(2) Development of wheat-livestock operations in the drier parts of the region, particularly on the fringes where grazing lands are available, with expansion in wheat feeding (straw and grain) to range cattle.

(3) Increased dairy and poultry production in the coastal areas of Oregon and Washington. Heavier grain feeding is one way of obtaining increased milk production in many dairy herds. Both dairy cows and chickens are heavy consumers of concentrates, and expansion of these enterprises to the point that seems desirable from the standpoint of the defense program would offer possibilities for heavy increases in wheat feeding. For instance, if chicken numbers were increased to the number on hand in 1931, an increase of 3-1/2 million chickens over 1941 numbers would be necessary. This increased number would provide an outlet for about 4 million bushels of wheat.

(4) Curtailment in the use of feeds usually shipped in from outside the region and the substitution of wheat. Experimental evidence indicates that wheat can replace corn in livestock rations with no loss in efficiency.

The above means of increasing the feeding of wheat to livestock are dependent upon a price for wheat favorable for feeding. A favorable price relationship alone, however, is not sufficient to overcome farmers' preference for the direct sale of cash crops, as long as the direct sale will give them an adequate income. In other words, a high price for wheat when the feeding ratio is favorable discourages increased feeding of wheat to livestock such as would be necessary to dispose of the surplus wheat.

Desirable Adjustments. - In the past, reduction of wheat acreage has been considered the most important part of a solution of the wheat problem. In certain places in the wheat region where alternative opportunities for the use of land are available and where soil conserving crops and practices have not been fully applied, this is still the major adjustment which seems to be needed. In many areas, however, the production of wheat offers the only profitable use that can be made of the land. It must also be recognized that in most of these areas wheat produces more total digestible nutrients per unit of land than any other crop. The solution of the wheat problem, therefore, lies not only in acreage adjustment but also in a different utilization of the wheat grown.

For areas having an average annual precipitation of 16 to 18 inches, or over, it has been recommended that on each farm about one-third of the cropland should be in grass or green manure, one-third in peas or other specialty crops, and one-third in wheat. This recommendation would apply to the major portion of the Palouse area and to parts of the South Snake River area. In a recent study of dry pea production in the Palouse area<sup>7</sup> it is estimated that the area in which dry field peas can be grown extends over 960,000 acres of farm land, of which 800,000 acres are cropland. In 1937 and 1938, 27 percent of this cropland was in peas and other soil-depleting crops.

The 1934-38 average production of peas in the Palouse area was about 2.5 million bushels, from 145 to 150 thousand acres. Supplies of dry peas during this period were ample if not in excess of market demand. If the acreage of peas or peas and other soil-depleting crops is increased to one-third of the cropland and should reach 200 to 250 thousand acres, the supply of dry peas will range between 3.5 and 5 million bushels or from 60 to 100 percent more than its present volume, unless some other crop can be found that is equally suited. Such an increase would no doubt create serious surplus conditions, and prices likely would decline to a level where peas can no longer compete with summer fallow in a rotation of wheat-summer fallow.

Thus it appears that the recommendation for the higher rainfall sections of the wheat region would create a serious surplus problem for peas and for this reason requires further careful consideration. Research investigations on other types of crops, such as safflower seed, are proceeding and later may indicate some other alternatives.

Recommendations have been made that in the areas of low rainfall in the region, 15 percent of the total area should be retired permanently to grass and 85 percent should be placed in a rotation of wheat and grass, the ratio, consistent with adequate land use practices, to be dependent upon the demands for and the price of wheat. Individual farmers may find many obstacles in the way of adopting these recommendations, but others may find it advantageous to make the shifts.

In most of the low-rainfall areas alternate wheat-summer fallow rotation is practiced. Additional grassland in these areas will provide the basis for keeping or increasing livestock. In some parts, however, because of the difficulty of growing forage of any kind and the low carrying capacity, permanent grassland and grassland in rotation is not likely to provide a stable basis for livestock production. Water shortage is also a factor making livestock production in these areas difficult. Preliminary budget studies of the effect of incorporating the above recommendations into the present farming systems in the low-rainfall areas indicates that a considerable reduction in farm income must be expected under present as well as assumed prices, for the period 1943-45, unless size of operating units is increased considerably.

Regulations under the AAA program do not permit the production of wheat on formerly abandoned or retired cropland unless an equal acreage of present farm land is being retired, or unless penalties for "excess" wheat production are paid by the grower. Efforts to prevent the use of these areas for wheat production are desirable from both the short- and the long-range viewpoint. However, there are large areas of formerly abandoned or retired wheat lands on the western fringe of the wheat region, chiefly in the Big Bend area and southern Idaho, which in the past have gone in or out of wheat production depending upon prices and moisture conditions. Favorable moisture conditions and comparatively high prices for wheat may stimulate wheat production in these areas despite the penalty provisions of the AAA program. Thus the short-time trend in wheat production may not conform either to recommendations with regard to desirable cropping systems nor to needed adjustments over a longer period.

The problem of adjustment is less difficult in areas of more than 16 to 18 inches of rainfall where there is a greater choice of crops, than in those of low rainfall. In areas of less than 16 inches of rainfall, wheat in most cases is the only possible crop, although considerable fluctuations in annual rainfall make production somewhat risky. In these areas adjustments can be made toward livestock production on enlarged farms where water and range are available and the carrying capacity is comparatively high. Grain hay for roughage and the feeding of wheat can provide the necessary winter feed for range livestock. Higher prices for cattle should offer wheat growers in these dry areas an excellent opportunity to test out the desirability of more beef cattle.

Considerations of soil conservation and good management practices suggest that as a long-time desirable goal wheat acreage should be reduced below the 1943-45 expected acreage.

Production in Other Areas.— Outside of the main wheat area in the Pacific Northwest, the crop is of most importance in southeastern Idaho and in California. Wheat production in California is large, but there is no surplus problem. Control programs and competing crops are expected to reduce wheat acreage in the four Southwestern States by about 185,000 acres below the 1935-39 period, but only 30,000 acres below the 1939 acreage. Reduced acreages of wheat will cause higher prices for wheat used as feed, which will encourage a shift to other feed grains, particularly barley. Better conservation and management practices should be emphasized in these areas, but on the whole these problems of adjustment are minor compared with those in the main Pacific Northwest wheat area.

#### Fruit Production and Adjustments

Importance of Fruit Production in the Region.— Improved demand conditions for fruits in domestic and export markets before 1930, favorable climatic conditions, irrigation, easy access to the major consuming centers, and great improvements in transportation facilities resulted in a large and highly commercialized fruit production in the Far Western region. Nearly all kinds of fruits and nuts grown in the United States

are found here, and for many of them the region is the only or the chief source of supply, within the nation--among them are apricots, prunes, most varieties of grapes, lemons, dates, figs, olives, walnuts, and filberts.

In 1939, about 13 percent of the gross agricultural income of the Far West was from fruit, compared with 5 percent for the United States. Fruit constituted 26 percent, 18 percent, and 11 percent of the 1939 gross agricultural income for California, Washington, and Oregon respectively; 8 percent for the States of Idaho, Utah, and Arizona; and less than 1 percent for Nevada. The Far Western region produces 43 percent of the United States gross farm fruit income and has but 8.7 percent of the population. California alone produces about one-third of the fruit of the United States, but has only 5.3 percent of the population.

Location of Fruit-Producing Areas.—Favorable climatic conditions together with the availability of irrigation have been the chief determining factors in the location of fruit production in certain areas of the region. The most important fruit-producing State, from the viewpoint of volume as well as variety, is California, with a total area in orchard fruits, vineyards, and planted nut trees of almost 1.5 million acres. Production in this State is carried on under greatly varying natural conditions and includes the production of tropical or semi-tropical fruits grown in the southern part of the State as one extreme to the production of hardy fruits in the foothill areas of the Sierra Mountains as another extreme. In most districts the production is highly concentrated and confined to a few related kinds of fruit, although orchards are scattered somewhat in a few less favored areas or in areas where other agricultural commodities have offered strong competition to fruit production. The chief producing districts in California are the central valleys of the State, the South Coast areas, the Santa Clara Valley, and the valleys north of San Francisco Bay.

In Oregon, fruit production is limited by climate to the main deciduous fruits, nuts, and berries. The major areas are the Rogue River, the Hood River, the Willamette and the Umpqua Valleys. In Washington, apples are the most important fruit produced. Major areas are the central irrigated valleys. Scattered production of small fruits is also found in coastal areas.

Other notable areas of fruit production are the lower Snake River Valley of Idaho, the central irrigated areas of Utah, and the Salt River Valley of Arizona.

General Trends in Fruit Production and Present Situation.—Fruit production in the Far Western region, prior to 1930, expanded greatly in response to increased domestic and foreign demand. Production in 1930 was at a high level but increased further during later years because many trees planted during the 1920's came into full bearing. During the 1930's reduced export demand and generally low purchasing power of domestic consumers brought unprofitable prices to growers. Widespread distress in producing areas continued for several years with the result that the acreage in orchard fruit, vineyard, and planted nut trees in

the region decreased by over 13 percent from 1930 to 1940 (table 6). The reduction in fruit acreage, however, was considerably greater in areas where production costs were comparatively high, or where the demand for varieties grown had declined drastically.

Table 6.- Land in orchard fruit, vineyard and planted nut trees, Far Western States, and United States, 1930, 1935, and 1940

Area	1930	1935	1940
	Acres	Acres	Acres
Arizona	21,961	28,290	23,658
California	1,603,447	1,561,172	1,415,011
Idaho	36,989	32,251	17,958
Nevada	1,377	1,496	762
Oregon	152,304	156,108	128,257
Utah	19,375	17,827	15,333
Washington	158,508	155,437	125,594
Region	1,993,961	1,952,581	1,726,573
United States	6,086,176	6,220,679	5,044,952

United States Census of Agriculture.

The low purchasing power of domestic consumers since 1930 has probably been the main factor responsible for low prices to fruit growers. In the Far Western region, however, where growers of many fruits relied heavily upon foreign markets, the developments, particularly in Europe, had a profound influence upon their returns. It has been estimated that approximately 235,000 acres of fruitland were required to produce the average annual tonnage exported from California alone during the 5-year period 1934-38.<sup>8/</sup>

Domestic demand for fruit has improved somewhat during the last 5 years and together with various governmental programs for the relief of distressed conditions has contributed materially to an improvement in grower returns or at least to a cessation in the downward trend of fruit prices. The export situation, however, has become more acute and fruit exports at present are practically nonexistent, except for small quantities shipped to non-belligerent countries. Increased domestic demand,

<sup>8/</sup> Shear, S. W., Hoos, Sidney, and Wellman, H. R., "Effects of the War on California Fruit Industries". Mimeo. report No. 74, Giannini Foundation of Agricultural Economics, University of California, Berkeley, California.

even during the defense period, has not been sufficient to replace the former export market for some major fruits, nor can it be expected to do so.

The past decade of low prices for fruit has brought about several problems now faced by the fruit industry. Orchards which, during the 1920's, appeared to be large enough to produce an adequate income for the operator have been found to be too small to insure a living during periods of prices such as may be expected over a long period of time. Furthermore, during the unfavorable price period of the past decade, few growers set out enough trees to maintain numbers. Therefore, the average fruit tree in the region is considerably older than the average 10 years ago. Another problem of major importance to the fruit industry is found in the high land values. Downward adjustments have taken place during the past 10 years of low prices, usually with considerable financial losses. Changes in prices of fruits have a more serious effect upon real estate values and in turn upon the stability of the industry than is the case with other agricultural commodities.

Long-time considerations and adjustments. - Fruit production, because of the relative permanence of the fruit-bearing surface, cannot be changed greatly within a short period to meet special demands. During the emergency period, therefore, no great change can be effected except insofar as increased applications of fertilizer and better orchard-management practices will bring higher yields and larger total production. Thus, over a short period of time, when higher prices are expected the fruit grower is limited in his ability to increase output from present acreage.

Generally speaking, the long-time outlook for prices for fruit and for production are of most importance, while short periods of favorable prices offer an opportunity to make needed adjustments. Fruit growers in the region who have been unable to make changes because of the loss of income or the high expenses involved, may find it possible during the emergency period to carry out their plans. Higher prices for certain products such as dairy and poultry may also offer an opportunity for fruit growers to diversify their operations by adding one of these enterprises.

The defense period will give growers a chance to increase the stability of their business, to reduce debts and mortgages, to combine small units where necessary, to limit the production of varieties for which the demand has declined considerably and is not expected to return, and to make necessary replacements to obtain a normal age distribution of trees.

#### Apples

Since 1920 the apple industry in the region has exhibited two distinct trends: (1) decreasing number of trees, and (2) increasing average yield per tree. Growers did not plant enough trees during any 5-year period from 1920 to 1940 to maintain numbers. Furthermore,

because of low returns, pulling rates during recent years have been somewhat heavier than justified by old age and normal death losses.

Increasing average yield per tree is due to the increased production on trees as they reach full bearing age, to the removal of old trees with low yields, and to better cultural practices. From 1920 to 1930 total apple production in the region increased because the increasing average yield per tree was relatively more important than the decreasing number of trees. From 1930 to 1940 the trend in apple production in the region has been downward because the decreasing numbers of trees were relatively more important than the increasing yield per tree (table 7).

Table 7.- Commercial apple production in the seven Far Western States and the United States, 1934-40 and estimates for 1944 and long time goal

State	Average	Actual	Actual	Expected	Long-time
	1934-38 <sup>1/</sup>	1939 <sup>1/</sup>	1940 <sup>1/</sup>	1944	desirable
	1,000 bu.	1,000 bu.	1,000 bu.	1,000 bu.	1,000 bu.
Arizona	-	-	-	-	-
California	7,897	8,024	6,498	6,600	4,500
Idaho	3,635	2,574	2,160	1,850	1,700
Nevada	-	-	-	-	-
Oregon	3,462	2,900	3,263	2,800	2,330
Utah	356	395	330	300	220
Washington	29,411	26,000	27,469	24,250	22,500
Region	44,761	39,893	39,712	35,800	31,250
United States	121,755	143,085	114,391	-	-

<sup>1/</sup> Agricultural Marketing Service.

Apple production will continue to decline at least until 1955, and as long thereafter as growers continue their present low planting rates. Smaller annual supplies in the future will result in more profitable returns. This favorable condition is expected to continue until young trees are brought into bearing in sufficient volume to oversupply the market. Once the industry is on a profitable basis, it becomes important to guard against overexpansion.

Judging from the experience of the last 20 years, and assuming an age distribution that would give a constant production except for year-to-year fluctuations, it appears that roughly 11 million trees would constitute an equilibrium number for the region. Under these conditions, there should be no long-time tendency for the number of trees to increase or decrease. The equilibrium number of trees is slightly under the number standing in 1935. However, about 30 percent should be non-

bearing as compared to 12.9 percent nonbearing in 1935, and the bearing trees should be younger on the average. The yield per bearing tree under average climatic conditions should be about 4.3 bushels per tree. This is higher than the average for 1920-40, because the lowest yielding apple land should be used for other purposes. Under these conditions, the average commercial production would amount to about 31 million bushels, which under normal demand conditions could be sold on the domestic market at a price high enough to maintain production. In years of severe industrial depression and in years when the national crop was unusually high, a considerable part of the crop would need to be exported, diverted into byproducts, or left unsold.

### Peaches

Peach production in the Far Western region is concentrated in California, where 90 percent of the regional total originates (table 8). Production in California declined from 1930 to 1935, but has since increased to about the former high level. Some decline in California production is expected by the 1943-45 period because of flood damages in 1941 which destroyed about 5,000 acres of bearing peach trees out of 80,000 acres, and because a high proportion of the trees are in the older age groups. The expected decline in peach production, however, will eventually stop as nonbearing trees come into production.

Table 8.- Total peach production in the Far Western States and the United States, 1927-40; estimates for 1943-45 and long-time goal in Far Western States

State	Average 1927-32	Average 1933-38	1939	1940	1943-45 estimate	Long- time goal
	1,000 bu.	1,000 bu.	1,000 bu.	1,000 bu.	1,000 bu.	1,000 bu.
Arizona	73	43	51	50	50	50
California	22,210	20,974	24,293	23,585	20,000	22,000
Idaho	152	123	136	207	150	150
Nevada	5	5	6	5	5	5
Oregon	258	277	391	365	375	375
Utah	639	358	564	600	600	400
Washington	1,007	1,085	1,210	1,494	1,470	1,300
Region	24,344	22,865	26,651	26,306	22,650	24,280
United States	54,946	51,161	61,072	54,430	-	-

Historical data from Agricultural Marketing Service.

Most of the peaches produced in the region outside of California are consumed within the region, and the price received has been higher relative to apples and other deciduous fruit. Peach production in Washington and Oregon, therefore, has continued to expand. The result of this expansion has been a decrease in the price advantage formerly held by peach growers of Washington and Oregon. The lower price in these States has resulted in some commercial canning of peaches. It is doubtful if Oregon and Washington peach growers can compete on a canning basis with California growers because of their lower average yields and greater fluctuations in yields from year to year. For this reason the long-time desirable for the State of Washington has been reduced somewhat in relation to the expected 1943-45 average. For interstate shipments it would seem that Washington has a greater comparative advantage over California in the production of apples, and California has the higher advantage in the production of peaches.

#### Oranges

The production of Navel oranges has been about stable for the last few years, and it is expected that this situation will continue during the next 5 years. Production of Valencia oranges on the other hand has increased, and, with the relatively large number of young trees now in orchards, production may be expected to increase by 2 or 3 million boxes during the next few years. On a long-time basis Navel oranges may decline sufficiently to about offset the upward trend in Valencia production.

The grower of oranges, particularly the operator with 10 to 15 acres or less, has been in an unenviable position during the past few years of extremely low prices. With the assumed prices for oranges in the 1943-45 period considerably higher than recent prices, he will be in a more favorable situation. This favorable price will be offset in part at least by higher costs of operation, particularly for hired labor. The demand for labor in California may be expected to be heavy and to create an acute situation if the defense program continues, because of the high concentration of defense activities in airplane factories and ship-building yards on the coast. If higher prices materialize, the orange grower on the larger acreage should take every opportunity to reduce his indebtedness and place his operations on a sound basis if possible, rather than expanding operations or materially increasing his scale of living. The grower on a small acreage might well consider the possibility of adding a poultry sideline during the period 1943-45, should he be planning to continue in farming production. The owner of a 10-acre orchard or less has an uneconomic unit and in normal times he cannot expect to make a living from this acreage. Prices in the period 1943-45 may advance sufficiently so that the owner of a small orchard might be able to sell to advantage. Where the owner wishes to expand his acreage up to an economic unit, he should be careful about making real estate investments on a high price level to be paid out of income on a low price level.

### Grapefruit

Between 1935 and 1940, grapefruit growers in California and Arizona have materially reduced their rate of planting, and they are pulling trees at a much faster rate than would be expected from natural mortality. Relatively large numbers of trees were planted between 1925 and 1935. A large proportion of these trees are still in the early bearing period and would furnish the basis for an expanding production in 1943-45 were it not for the heavy rate of tree pullings. On the basis of census data, it appears that about one-fourth of the trees in Arizona standing in 1935 were pulled by 1940. A decline in California of similar proportions occurred. The abnormally high rate of tree pulling is the direct result of the extremely low prices for grapefruit.

The decline in tree numbers between 1935 and 1940 has about offset the increased yield per tree so that total production has leveled off. It is probable that these two trends will continue to offset each other during 1943-45 so that there will not be much change in production. California production is expected eventually to decline to about one-half of the present volume. The decline in grapefruit production in Arizona should not be so severe, as Arizona grapefruit has a better demand. The producer in that State should look forward to supplying most of the demand in the region for fresh grapefruit. In this case, it may well be that Arizona grapefruit growers are eliminating too many trees for their own best interests.

### Other Fruits and Nuts

The outlook for expansion or contraction in the production of other fruits and nuts varies by commodities, depending upon the age distribution of present trees and vines, their natural expected life, and present or expected prices. Prices are highest on the commodities on which we are on an import basis (olives, for example) and lowest on commodities on which we are on an export basis (as fall pears). In the past, growers have used existing prices as a guide to initiating and curtailing production. This is an inadequate basis and one that has frequently led to wide fluctuations in production and financial difficulties. For example, it is unwise for olive growers to expand production on the basis of present high prices, because the prices are likely to return to their former low levels once international trade is restored. Olive trees set out now probably cannot be brought into production in time to obtain the high prices.

Prunes. - The demand for prunes was greatly impaired during the period 1930-40, because of loss of export markets. The resulting low prices discouraged plantings during this period and a large proportion of trees are now in the old age groups. It is probable that the acreage of bearing prunes in California will decline from 151,000 acres in 1939 to about 135,000 acres in 1943-45, because of the pressure of low prices and the removal of old and submarginal trees. Some of this reduction will be replaced by nonbearing trees, because most growers have

trees of varying ages. When an old tree dies, little economy is gained by not setting out a young tree in its place.

Prune production in Oregon is decreasing rapidly. In 1930 there were 5.3 million bearing trees in the State, and in 1940 only 3.6 million trees. In the same period nonbearing trees declined from 300,000 to 100,000 trees. Decline in production has been accompanied by a reduction in quality. Many of the Oregon prune trees are old and it is expected that production will continue to decline until after 1943-45.

Grapes.— California produced 99 percent of the grapes produced in the region. In 1939 that State had 240,000 bearing acres of raisin grapes, 169,000 acres of wine grapes, and 79,000 acres of table grapes, or a total of 488,000 bearing acres.

Increased consumption of California wines, because of increased consumer purchasing power and curtailment of European imports, has materially strengthened the position of the growers of wine grapes. This improvement has extended to table and raisin varieties, because such varieties are used in wines. Consumer acceptance of California wines can be of lasting benefit to growers if the quality is kept high and may provide a basis for an expansion of the wine varieties even after the emergency period is passed.

Raisin grapes have been in a less favored position, because of the relatively high percentage normally exported. However, with the increased use of raisin varieties for table and wine purposes and the stimulus afforded to exports by the Lend-Lease program there should be no incentive in the immediate future to reduce raisin acreage.

Adjustments in production of grapes are less difficult on the whole than for tree fruits because of the shorter time required to bring them into full bearing, and because grapevines can be removed more easily than fruit trees. However, much grape acreage is on sandy, coarse soil that is not well adapted to growing other crops. This means that more resistance to adjustments will be felt than if other crops could be grown advantageously.

#### Special Field and Truck Crops

In most of the Western States, particularly Arizona, California, Idaho, Oregon, and Washington, much more land is capable of producing such specialty crops as sugar beets, potatoes, beans, rice, flaxseed, and vegetables than has ever been used for such purposes. Although certain limited areas at times have gone too largely to some of these crops, from the viewpoint of good land management, considerable expansion of acreage in these crops would be possible within the general framework of good cropping practices, particularly in irrigated areas. The price-cost relationships are the critical factors, and not availability of good land; this is especially true for any one of these crops, and to a lesser degree for the group as a whole.

If prices are such that net returns for these specialty crops are above the net returns for other crops there will be an expansion in their production. Because these crops are relatively intensive enterprises, the cost of hired labor will be the chief deterrent to any expansion. Also, some of these crops require more water than other crops now grown, so where water supplies are limited an additional brake on expansion would be present.

If the emergency war period should require it, these western irrigated areas offer the possibility of quick expansion with little dislocation or maladjustment to follow. Some reduction of staple crops would follow, but such reductions could be easily met in the major staple-crop areas.

Acreage of the more important field crops of sugar beets, potatoes, dry beans, dry peas, flaxseed, cotton, and rice and the distribution by States is shown in table 9. Approximately 2 million acres of these seven crops comprised about 11 percent of the cropland harvested in the region in 1939. With the exception of dry field peas and a part of the dry bean acreage, these crops were produced almost entirely on irrigated lands. For sugar beets, dry beans, and dry field peas the acreage in the region is a large percentage of the total United States acreage. Compared with the total United States acreage of flaxseed and cotton, however, the acreage in the Far Western region does not loom large.

Table 9.— Acreage of specified field crops in seven Far Western States and in United States, 1939

State	Sugar	Pota-	Beans	Dry	Flax-	Cotton	Rice
	beets	toes	(dry : edible)	field peas	seed	:	:
	1,000	1,000	1,000	1,000	1,000	1,000	1,000
	acres	acres	acres	acres	acres	acres	acres
Arizona	-	2	11	-	5	188	-
California	166	74	329	-	108	327	120
Idaho	73	124	108	56	10	-	-
Nevada	-	2	-	-	-	-	-
Oregon	7	45	2	2	7	-	-
Utah	53	13	-	-	-	-	-
Washington	12	42	-	101	9	-	-
Region	311	302	450	159	139	515	120
United States	917	3,018	1,631	211	2,250	23,805	1,040

U. S. Department of Agriculture, Agricultural Marketing Service.

Sugar Beets.— California, Idaho, and Utah are the important sugar-beet States in this region. In Utah the acreage has fluctuated around 45 or 50 thousand acres during the past 15 years. Acreage in Idaho has

fluctuated more, but was no higher in 1939 than in the peak year of 1933. In California, on the contrary, acreage expanded steadily from 46,000 acres in 1929 to 173,000 acres in 1940. Largely because of quota limitations, the indicated acreage for harvest in California, Idaho, and Utah in 1941 will be 229,000, compared with 292,000 in 1940.

From the physical standpoint, sugar beets can be expanded considerably, particularly in California, subject to increasing difficulties with diseases and pests. With only a moderate increase in prices, it is expected that Utah and Idaho producers will expand production only slightly, although processing-plant capacity in most areas is ample to take care of a marked expansion. In California, because of the upward trend which indicates that sugar beets have a relative advantage compared with other crops, it may be expected that acreage would expand considerably if quotas were removed and present price and payments continued. Increased costs of hired labor will be a discouraging factor, however, particularly in California where sugar beets are grown in large blocks.

Sugar beet acreage in the region could easily be expanded from the 311 thousand acres in 1939 to more than 400 thousand acres if prices are favorable, without taxing the processing-plant capacity. Many farmers in irrigated areas like to grow beets because they fit well into rotations with alfalfa and clover and have provided a profitable cash crop during most years.

Potatoes.- Little change in the acreage of potatoes is anticipated under the assumed price changes for this crop. Because of relatively heavy labor demands the potato grower may find his costs increased if labor shortages develop in the major producing areas. If defense needs should require it, production of potatoes could be expanded greatly by use of only small additional acreage, because of the high yields per acre throughout most of the irrigated areas where most of the crop is grown in this region.

Beans (dry edible).- Practically all of the dry beans produced in the region are grown in California and Idaho. The region in 1939 had 28 percent of the dry bean acreage of the United States and produced 40 percent of the total U. S. crop. Bean acreage has expanded materially during the past year, especially in Idaho, because of increased defense demands. California has had a marked shift from the dark varieties to the white varieties which are in greatest demand at present. There has also been a moderate increase in total acreage.

It is expected that by 1943-45 the acreage of beans will increase considerably over the 1939 acreage, though not greatly over the 1941 acreage. Relatively little hand labor is required for this crop, so labor shortages will not be such an important factor as in more intensive crops. Diseases and plant pests may limit expansion in some areas.

Large acreages of beans are grown on steep land subject to severe soil erosion, in California particularly. Efforts should be intensified to institute soil-conserving practices and crops in such areas; otherwise large-scale abandonment of land eventually will result. The long-time

desirable goal in California should be for a material reduction in bean acreage on steep, eroding lands and substitution of forage crops where feasible. In irrigated areas the desirable acreage is determined largely by price-cost relationships and with a return to lower prices a reduction in acreage from the emergency level will be in the farmers' interest.

Flaxseed. - In California, where most of the flaxseed of the region is produced, the crop has expanded tremendously during the last few years--from 11,000 acres in 1934 to 213,000 acres estimated for 1941. The 1941 acreage is almost double that of 1939.

In California and Arizona where danger from winter killing is small, flaxseed is planted in the fall. The crop has been expanding northward on this basis, but this expansion will be discouraged if severe winter killing should be encountered, as is a possibility in any of the upper San Joaquin Valley areas. Further expansion is also limited by the necessity of using weed-free lands. It is believed, however, that a doubling of acreage in the San Joaquin Valley is physically feasible.

In the past the price in the region has been approximately Minneapolis price plus freight because the Far West was a deficit area, and shipping charges from Argentina to the West Coast were higher than to the East Coast. With production in the region exceeding about 200,000 acres, it is to be expected that surpluses over local needs will appear, and the freight differential will tend to be Minneapolis minus freight. This will be true particularly after the present emergency period, with smaller demands for linseed oil in industrial uses. However, this will be offset by the premium of about 10 cents per bushel received for the Punjab variety of flaxseed, grown mainly in California and Arizona, which is of better quality than that grown in other parts of the United States and in Argentina.

Even with the deterring factors, it is estimated that flaxseed acreage in California will expand to about 250,000 acres in 1943-45. The acreage could be expanded much more if the price should rise above the assumed.

In Arizona, on the other hand, where most flaxseed acreage is in Yuma County, there likely will be a decline in production from the present 15,000 acres to perhaps 10,000 acres. Because of disease and yield difficulties with cotton, there was a big shift from cotton in Yuma County with the price at about 9 cents per pound. Flaxseed took up part of the slack. However, with the 85 percent of parity loan in effect on cotton, it is expected that Yuma County farmers will grow cotton more nearly to their allotted acreage, and that flaxseed will be unable to compete with the relatively higher priced cotton in that area. Flaxseed production in other parts of the region is expected to remain about at present low levels.

Dry Field Peas. - Production of dry field peas in the region is concentrated in the Palouse area of eastern Washington and northern Idaho. In 1939 that area produced about four-fifths of the total United States commercial crop of dry edible and seed peas. Dry field peas are

grown on dry farm land in lieu of summer fallowing. An increase in acreage would, therefore, replace no other crop but it would cause some reduction in wheat yields the following year. Present prices are sufficiently high to induce a large expansion in acreage. It is reported that 1941 acreage exceeds the estimated acreage for 1943-45.

If increased emergency demands should develop for dry peas, the acreage could be doubled or trebled without seriously taxing the productive resources and abilities of the farmers of the area, though some small additional specialized equipment probably would be necessary for attachments to regular grain combines. Canned soaked peas have been suggested as one possibility for providing a concentrated high-protein food. This method of taking dry peas, soaking them, and then canning provides a pea of higher protein content and higher food value than the green pea, though it is perhaps less palatable.

Farmers should proceed cautiously in any expansion program because of the relatively limited market for the product. The acreage of field peas, however, because the crop replaces summer fallow, can be contracted without serious maladjustment or loss of capital.

Rice.-Acreage of rice in California fluctuated from 100,000 to 138,000 acres during the 1930's, and was 118,000 acres in 1940. With an increase in price as assumed, it is expected that the acreage will expand to about the upper limit of past production, or about 138,000 acres, an increase of 20,000 acres. Rice lands are available and can be expanded readily without any serious difficulties.

Cotton.- Cotton production is confined to the irrigated valleys of Arizona and the southern half of California. In 1939 these two States had 515 thousand acres of cotton, approximately two-thirds of which was in California and one-third in Arizona. The production in California is almost entirely short-staple upland cotton, whereas in Arizona considerable acreages of long-staple American-Egyptian cotton are grown. Acreage of long-staple cotton fluctuates widely from year to year and since World War I was relatively unimportant until the last few years. From an average acreage of 34,000 from 1930 to 1939, American-Egyptian cotton in Arizona increased to 41,000 acres in 1939, to 65,000 in 1940 and an estimated 90 to 100 thousand acres in 1941. This expansion has been due entirely to the relatively favorable price relationship for this type of cotton. With the expanded acreage in Arizona this year, together with a similar expansion of acreage in New Mexico and western Texas, it is probable that farmers will adjust the acreage downward during the next few years because of less favorable prices, unless there is a very considerable increase in demand for this type of cotton.

Cotton growers in Arizona and California in the past have expanded and contracted their acreage markedly in adjustment to price prospects. For instance, in 1937, when no acreage control programs were in effect, cotton acreage was 919,000--about two-thirds greater than the acreage in either 1936 or 1938. Because of average yields which have exceeded 500 pounds of lint per acre in Arizona and over

600 pounds in California, the crop has been profitable, even at relatively low prices. In Arizona, cotton has been planted on about one-third of the total irrigated acreage of the State, and some 30 thousand acres of new land has been brought under irrigation in one county alone during the last few years in order to grow cotton.

Acreage of short-staple cotton in Arizona has been less than the allotted acreage under the AAA program during the last 2 or 3 years, largely because of the shift to growing of long-staple American-Egyptian cotton and partly because of the high 1937 acreage. In California, where no American-Egyptian cotton is grown, the allotted acreage has been more nearly approached. Present indications are that the 1943 allotment in these States will be about 600,000 acres. Under the 85 percent parity loan legislation it is to be expected that the price of cotton will be so favorable that farmers will adjust their acreage of cotton to about the maximum allowed under the AAA program. If it is assumed that the present program will continue about as now constituted, there will be no downward adjustment in cotton acreage; in fact, cotton acreage will be somewhat higher in the 1943-45 period than during 1939 and 1940.

In Arizona, competition for use of lands outside the AAA program will be between long-staple American-Egyptian cotton and alfalfa or some other crop. Acreage of long-staple cotton will depend entirely upon price expectations. With the price somewhere near 24 or 25 cents per pound, it is estimated that some 60,000 acres of American-Egyptian cotton will be produced in Arizona--less than the acreage grown in 1940 and 1941. The reduction is expected because of increased labor costs. With higher prices the acreage will be greater. Very little long-staple cotton is produced in California, and it is not likely that any expansion will occur unless the price becomes extremely favorable. No great expansion is anticipated even then, as long as the one-variety law is maintained throughout the major cotton-growing areas of California, and if the law were removed premiums that have been received because of uniform grade might be jeopardized.

Because of plentiful water supplies for the first time in many years, particularly in Arizona, there is a danger that expansion will proceed too far in some of the cotton-producing areas. AAA control programs will limit expansion in short-staple production, but if the price is favorable there may be a large expansion in American-Egyptian production. In the pumping areas especially, undue expansion may later force some very serious retrenchments if there is a return of several dry years. Lowering of the water table will affect adversely not only any new land, but the older farms as well.

Introduction of more alfalfa into the rotations in some cotton areas would be desirable for a permanent agriculture. If surplus-cotton production in the United States is maintained during the post-defense period, with lower prices, the long-time desirable in Arizona and California probably would be a smaller cotton acreage. These areas for the most part can shift to other crops without serious dislocations, depending upon price relationships of other alternative crops.

Truck Crops.—As with fruit crops, California is the major area of commercial truck crop production in the region, with about three-fourths of the 666,000 acres in the region in 1939 (table 10). Truck-crop production in the Far West, particularly in California and Arizona, has been for market rather than for processing, largely because the climate permits production during the winter when most other areas cannot produce for fresh consumption. In Washington, Oregon, and Utah, however, most vegetable production is for processing. Commercial truck crop acreage for market comprised 70 percent of the total truck crop acreage in the seven Western States, but only 58 percent in the rest of the United States. A shift toward a larger acreage for processing and a smaller acreage for market occurred from 1939 to 1940, probably chiefly as a result of the defense program.

Table 10.—Acreage of commercial truck crops for market and for processing, seven Far Western States and United States, 1939, 1940, and 1943-45 expected

State	For market		For processing		Total		1943-45 expected
	1939	1940	1939	1940	1939	1940	
	acres	acres	acres	acres	acres	acres	
Arizona	52	46	-	-	52	46	50
California	367	334	123	128	490	462	490
Idaho	11	15	3	4	14	19	15
Nevada	-	-	-	-	-	-	-
Oregon	13	14	25	35	38	49	40
Utah	5	5	18	22	23	27	32
Washington	22	23	27	35	49	58	59
Region	470	437	196	224	666	661	686
United States	1,753	1,691	1,139	1,333	2,892	3,023	---

Because of the intensive nature of production of truck crops, the highly specialized character of the operations, and the hazardous nature of the venture, shifts into and out of truck crops by nonexperienced farmers are relatively minor. This makes for a relatively stable total acreage of truck crops, but with extreme shifts from one to another of the crops making up the total. Truck croplands are often double-cropped and plantings are geared closely to anticipated prices.

Tightening of the labor situation will affect the truck-crop operator adversely, not only through higher wage rates because of fewer available laborers, but also because of the danger of losing part of the crop if laborers are not on hand at the right time.

With increased consumer purchasing power and efforts to improve diets, some increase in prices is expected. Labor rates may increase faster, however, and more than offset the price rise.

Any needs for more truck crops can easily be met if there is a corresponding price stimulus, because relatively few irrigated acres are required to produce a large volume. It is expected that a further shift to vegetable crops for processing will occur during the defense period as the demand for canned vegetables increases for shipment under the Lend-Lease program. Only a moderate increase in the total acreage is expected, however, because of increasing costs and uncertainties regarding labor supplies.

The grower of truck crops will necessarily be forced to watch more closely than ever the price situation and the cost factors, particularly hired labor and fertilizer, and to keep himself in position to retrench or expand as the occasion may require.

Appendix

Table 11.- Industrial production, income payments, wholesale prices, and farm expense items, 1939-41, and assumed 1943-45,  
United States

Item	Unit	1939	1940	Estimated 1941	Assumed 1943-45
Industrial production	Index(1935-39=100)	108	122	148	175
Income payments, total	Billion dollars	70.1	74.3	85.3	112.0
Non-agricultural	" "	63.7	67.6	77.8	101.5
Agricultural	" "	6.3	6.7	7.5	10.5
Farm cash income	" "	8.7	9.1	10.0	14.0
Wholesale prices	Index (1926=100)	77.1	78.6	84.0	95.0
Prices paid by farmers	Index(1910-14=100)	121	122	128	141
Interest and taxes	" " " "	127	127	132	144
Farm machinery	" " " "	157	153	1/	183
Building material 2/	" " " "	148	150	1/	172
Fertilizer	" " " "	100	98	1/	110
Wage rates paid to hired labor	" " " "	124	126	134	175

1/ Not available.

2/ For other than house.

Table 12.- Prices received by farmers, average 1935-39,  
United States and Far Western States 1/

Product	Unit	United States	Arizona	Calif.	Idaho	Nevada	Oregon	Utah	Wash.
Wheat	bu.	.82	.84	.81	.67	.83	.73	.76	.71
Rye	"	.51	-	.63	.53	-	.61	.62	.64
Corn	"	.63	.91	.88	.74	.96	.77	.93	.76
Oats	"	.29	.46	.41	.31	.47	.38	.39	.37
Barley	"	.48	.56	.50	.45	.61	.55	.54	.51
*Rice	"	.73	-	.65	-	-	-	-	-
Flaxseed	"	1.68	2/1.64	1.80	3/1.61	-	3/1.64	-	3/1.68
*Beans(dry edible)	cwt.	3.43	4.15	3.97	2.82	-	4.41	-	-
*Soybeans	bu.	.88	-	-	-	-	-	-	-
Seed, alfalfa	"	10.97	8.68	9.88	12.56	-	12.24	10.64	-
Hay:	:	:	:	:	:	:	:	:	:
* All classes	ton	8.31	9.49	9.42	6.92	6.49	8.45	7.49	9.00
* Alfalfa	"	9.54	8.64	10.16	7.04	7.72	8.94	8.06	9.10
*Sugar beets	"	5.30	-	5.60	5.03	-	-	4.88	-
Potatoes	bu.	.65	.89	.71	.46	.74	.73	.55	.69
Sweet potatoes	"	.78	-	1.14	-	-	-	-	-
*Apples	"	.78	4/1.47	.39	.70	5/1.37	.75	.79	.79
*Peaches	"	.88	1.45	.60	1.04	1.25	1.01	.96	.84
*Oranges	box	1.18	1.32	1.25	-	-	-	-	-
*Grapefruit	"	.62	.66	.77	-	-	-	-	-
Cotton	lb.	6/10	.112	.105	-	-	-	-	-
Cottonseed	ton	25.31	25.34	27.42	-	-	-	-	-
Hogs	cwt.	8.27	8.56	8.94	8.24	8.28	8.58	8.31	8.62
Beef cattle	"	7/7.25	7.14	7.36	6.17	7.16	6.81	6.52	6.72
Veal calves	"	8/8.60	7.88	9.12	7.17	8.68	8.68	8.63	8.83
Sheep	"	9/4.00	3.44	4.05	3.85	3.69	3.72	3.80	3.56
Lambs	"	10/8.00	8.00	7.90	7.22	7.67	7.10	7.44	7.16
Wool	lb.	.24	.22	.24	.24	.23	.24	.23	.22
Chickens	"	.15	.20	.18	.13	.18	.14	.13	.14
Eggs	doz.	.21	.27	.24	.20	.25	.21	.21	.22
Butterfat	lb.	.29	.31	.33	.30	.32	.30	.31	.30
Milk (whlse.)	cwt.	1.79	1.71	1.86	1.45	1.75	1.76	1.45	1.60
	:	:	:	:	:	:	:	:	:

1/ Computations based on calendar-year averages except where marked by asterisk, in which case crop-year averages were used.

2/ Only 1939 included.

3/ Only 1938 and 1939 included.

4/ Only 1935, 1936, 1937, and 1938 included.

5/ Only 1935, 1936 and 1937 included.

6/ Adjusted from arithmetic average of .099 cents per lb., with proportionate adjustments being made in State prices.

7/ Adjusted from arithmetic average of \$6.52 per cwt., with proportionate adjustments being made in State prices.

8/ Adjusted from arithmetic average of \$7.75 per cwt., with proportionate adjustments being made in State prices.

9/ Adjusted from arithmetic average of \$3.89 per cwt., with proportionate adjustments being made in State prices.

10/ Adjusted from arithmetic average of \$7.78 per cwt., with proportionate adjustments being made in State prices.

Table 13.- Assumed prices received by farmers, average 1943-45,  
United States and Far Western States 1/

Product	Unit	United States	Arizona	Calif.	Idaho	Nevada	Oregon	Utah	Wash.
		Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.
Wheat	Bu.	1.10	1.12	1.09	.90	1.11	.97	1.02	.96
Rye	"	.72	-	.89	.75	-	.86	.88	.90
Corn	"	.85	1.22	1.19	.99	1.29	1.04	1.26	1.03
Oats	"	.45	.72	.63	.48	.73	.59	.60	.58
Barley	"	.60	.70	.62	.56	.76	.69	.67	.64
*Rice	"	1.00	-	.89	-	-	-	-	-
Flaxseed	"	1.90	1.86	2.03	1.82	-	1.86	-	1.90
*Beans (dry)	Cwt.	3.70	4.48	4.29	3.03	-	4.77	-	-
Truck crops	Index	130	-	-	-	-	-	-	-
*Hay: all	Ton	9.50	10.83	10.74	7.88	7.41	9.69	8.55	10.26
*Alfalfa	"	10.50	9.56	11.13	7.77	8.50	9.87	8.82	9.98
*Sugar beets	"	6.00	-	6.36	5.70	-	-	5.52	-
Potatoes	Bu.	.80	1.10	.87	.57	.91	.90	.68	.85
*Apples	"	.95	1.79	.48	.86	1.67	.91	.96	.96
*Peaches	"	1.00	1.65	.68	1.18	1.42	1.15	1.09	.95
*Oranges	Box	1.65	1.85	1.75	-	-	-	-	-
*Grapefruit	"	.55	.58	.63	-	-	-	-	-
Cotton	Lb.	.15	.17	.16	-	-	-	-	-
Cottonseed	Ton	33.00	33.00	35.64	-	-	-	-	-
Hogs	Cwt.	12.00	12.48	12.96	12.00	12.00	12.48	12.00	12.48
Beef cattle	"	11.00	10.78	11.22	9.35	10.98	10.34	9.90	10.23
Veal calves	"	14.00	12.88	14.84	11.62	14.14	14.14	14.00	14.42
Sheep	"	7.00	6.02	7.07	6.72	6.44	6.51	6.65	6.23
Lambs	"	13.00	13.00	12.87	11.70	12.48	11.57	12.09	11.57
Wool	Ib.	.45	.41	.45	.45	.43	.45	.43	.41
Chickens	"	.20	.27	.24	.17	.24	.19	.16	.19
Eggs	Doz.	.25	.32	.29	.24	.30	.25	.25	.26
Butterfat	Lb.	.40	.43	.46	.41	.44	.41	.43	.41
Milk (whlse.)	Cwt.	2.45	2.55	2.55	1.98	2.40	2.40	1.98	2.18

\* Crop year average prices. All others are calendar year average prices.

1/ Prices for 1943-45 are based on special assumptions discussed in body of report. They are not forecasts of what prices will be. State prices have been computed by applying the ratio between the average 1935-39 U. S. farm price and the respective 1935-39 State farm prices to the average 1943-45 U. S. farm prices.

Table 14.- Arizona crop and livestock production: 1939 actual, 1943-45  
expected and desirable, and long-time desirable

Item	Unit	1939 actual	1943-45		Percentage			Potg. chang from 1939
			Estimated acreage or: number & production:		1939		Long-time: desirable:	
			Expected	Desirable	Ex- pected:	Desir- able:	(tentative):	
			(000)	(000)	(000)	(000)	(000)	
Number of farms	No.	18.5	18.5	18.5	0	0	19.0	+ 3
All land in farms	Acres	25,651	25,651	25,651	0	0	25,651	0
Cropland	Acres	781	750	750	+ 3	+ 3	800	+ 9
Wheat	Acres	35	30	30	-14	-14	40	+14
ye	Bu.	805	690	690	-14	-14	950	+18
ye	Acres	-	-	-	-	-	-	-
ye	Bu.	-	-	-	-	-	-	-
Corn-all purposes	Acres	22	32	32	+45	+45	40	+82
	Bu.	275	470	470	+71	+71	650	+136
Oats, for grain	Acres	10	10	10	0	0	10	0
	Bu.	230	257	257	+12	+12	257	+12
Barley	Acres	34	40	40	+18	+18	40	+18
	Bu.	1,156	1,280	1,280	+11	+11	1,280	+11
Rice	Acres	-	-	-	-	-	-	-
	Bu.	-	-	-	-	-	-	-
Cottonseed	Acres	5	5	5	0	0	5	0
	Bu.	110	110	110	0	0	110	0
Beans (dry edible)	Acres	11	10	10	- 9	- 9	10	- 9
	Cwt.	25	45	45	+80	+80	45	+80
Hay, all exclud- ing sorghums	Acres	281	250	250	+ 8	+ 8	300	+30
	Tons	496	690	690	+39	+39	840	+69
Alfalfa	Acres	162	210	210	+30	+50	260	+60
	Tons	405	630	630	+56	+56	780	+93
Sorghums, all except sirup	Acres	28	45	45	+61	+61	45	+61
Sugar beets	Acres	-	-	-	-	-	-	-
	Tons	-	-	-	-	-	-	-
Potatoes	Acres	2	2	2	0	0	3	+50
	Bu.	320	195	195	-11	-11	290	+32
Sweet potatoes	Acres	-	-	-	-	-	-	-
	Bu.	-	-	-	-	-	-	-
Apples, commercial	Bu.	-	-	-	-	-	-	-
Peaches	Bu.	51	50	50	- 2	- 2	50	- 2
Oranges	Boxes	520	650	650	+25	+25	650	+25
Rapefruit	Boxes	2,700	2,900	2,900	+ 7	+ 7	2,800	+ 4
Cotton	Acres	188	240	200	+28	+ 6	190	+ 1
	Bales	202	234	200	+16	- 1	190	- 6
Commercial vegetables	Acres	52	50	60	- 4	+15	75	+44
	Tons	229	220	264	- 4	+15	330	+44

Continued

Table 14.- Arizona crop and livestock production: 1939 actual, 1943-45  
expected and desirable, and long-time desirable - Continued

Item			1943-45		Percentage			
	1939		Estimated acreage or: change from number & production: 1939		Long-time Pctg.		desirable: change	
	Unit	actual	Expected	Desirable	Ex- pected:	Desir- able: (tentative)	from	1939
		(000)	(000)	(000)			(000)	
Beef & veal pro- duction, live weight	Lbs.	168,960	183,200	183,200	+ 8	+ 8	220,000	+30
Pork production, live weight	Lbs.	8,070	8,800	8,800	+ 9	+ 9	8,000	- 1
Lamb & mutton production, live weight	Lbs.	32,131	30,750	30,750	- 4	- 4	30,750	- 4
Milk cows, 2-yr. old and over January 1	No.	49	56	60	+14	+22	65	+33
Milk production	Lbs.	230,000	265,700	284,700	+16	+24	308,500	+34
Wool shorn	Lbs.	4,856	4,200	4,200	-14	-14	4,200	-14
Chicken egg pro- duction	Doz.	5,167	6,000	6,000	+16	+16	6,000	+16
Chickens raised	No.	996	1,158	1,158	+16	+16	1,158	+16

See table 2 for footnotes and sources of data.

Table 15.- California crop and livestock production: 1939 actual, 1943-45 expected and desirable, and long-time desirable

Item	Unit	1943-45		Percentage			Pctg. change from 1939
		1939		Estimated acreage or: number & production:		Long-time desirable:	
		actual	Expected	Desirable	Ex- pected:	Desir- able:	
		(000)	(000)	(000)		(000)	
Number of farms	No.	132.7	133.0	133.0	*	133.0	*
All land in farms	Acres	30,524	30,524	30,524	0	30,524	0
Cropland	Acres	8,652	8,900	8,900	+ 3	8,700	*
Wheat	Acres	658	635	635	- 3	650	- 1
Rye	Bu.	12,173	12,192	12,192	*	12,480	+ 3
Rye	Acres	6	6	6	0	6	0
	Bu.	66	66	66	0	66	0
Corn-all purposes	Acres	60	70	70	+17	75	+25
	Bu.	2,010	2,359	2,359	+16	2,528	+24
Oats, for grain	Acres	136	135	130	- 1	130	- 4
	Bu.	3,944	4,131	3,978	+ 5	3,978	+ 1
Barley	Acres	1,234	1,450	1,500	+18	1,400	+13
	Bu.	30,850	39,580	40,950	+28	38,220	+24
Rice	Acres	120	138	138	+18	120	0
	Bu.	9,000	9,489	9,490	+ 5	8,436	- 6
Flaxseed	Acres	108	250	250	+131	200	+85
	Bu.	1,728	3,200	3,200	+85	2,560	+48
Beans (dry edible)	Acres	329	325	300	- 1	275	- 16
	Cwt.	3,990	3,942	3,750	- 1	3,575	- 10
Hay, all exclud- ing sorghums	Acres	1,643	1,585	1,615	- 4	1,665	+ 1
Alfalfa	Tons	4,343	4,781	4,877	+10	5,028	+16
	Acres	751	875	900	+16	950	+26
	Tons	3,229	3,762	3,870	+16	4,085	+26
Sorghums, all except sirup	Acres	109	160	160	+47	140	+28
Sugar beets	Acres	166	175	175	+ 5	175	+ 5
	Tons	2,707	2,432	2,432	-10	2,432	-10
Potatoes	Acres	74	75	75	+ 1	80	+ 8
	Bu.	28,000	20,250	20,250	-12	21,600	- 6
Sweet potatoes	Acres	10	10	10	0	10	0
	Bu.	1,200	1,200	1,200	0	1,200	0
Apples, commercial	Bu.	8,024	6,600	6,600	-18	4,500	-44
Peaches	Bu.	24,293	20,000	20,000	-13	22,000	- 9
Oranges	Boxes	44,404	45,000	45,000	+ 1	39,850	-10
Grapefruit	Boxes	1,975	2,000	2,000	+ 1	1,000	-49
Cotton	Acres	327	375	350	+15	300	- 8
	Bales	450	470	438	+ 5	375	-17
Commercial vegetables	Acres	490	490	490	0	490	0
	Tons	2,150	2,150	2,150	0	2,150	0

Continued

Table 15.- California crop and livestock production: 1939 actual, 1943-45  
expected and desirable, and long-time desirable - Continued

Item	Unit	1943-45		Percentage		Pctg. change from 1939	
		Estimated acreage or number & production:		Long-time desirable:			
		1939 actual	1939	1939	desirable		
		Expected	Desirable	Ex- pected	Desir- able (tentative)		
		(000)	(000)	(000)	(000)		
Beef & veal pro- duction, live weight	Lbs.	484,075	525,000	525,000	+ 8	+ 8	
Pork production, live weight	Lbs.	165,668	194,000	194,000	+17	+17	
Lamb & mutton production, live weight	Lbs.	151,000	140,000	140,000	- 7	- 7	
Milk cows, 2-yr. old and over January 1	No.	674	765	800	+14	+19	
Milk production	Lbs.	4,243,000	5,200,000	5,438,000	+23	+28	
Wool shorn	Lbs.	29,132	26,180	26,180	-10	-10	
Chicken egg pro- duction	Doz.	138,250	173,000	180,000	+25	+30	
Chickens raised	No.	19,521	25,000	26,000	+28	+33	

\* Less than 0.5 percent.

See table 2 for footnotes and sources of data.

Table 16.- Idaho crop and livestock production: 1939 actual, 1943-45  
expected and desirable, and long-time desirable

Item	Unit	1939 actual	1943-45		Percentage		Long-time desirable	change from 1939	Pctg. from 1939
			Estimated acreage or number & production:		1939	desirable			
			Expected	Desirable	Ex- pected:	Desir- able:			
			(000)	(000)	(000)	(000)			
Number of farms	No. :	43.7	44.5	44.5	+ 2	+ 2	44.5	+ 2	
All land in farms	Acres :	10,298	10,350	10,350	*	*	10,350	*	
Cropland	Acres :	3,929	4,025	3,975	+ 2	+ 1	3,975	+ 1	
Wheat	Acres :	870	950	870	+ 9	0	870	0	
	Bu. :	21,311	22,800	22,620	+ 7	+ 6	22,620	+ 6	
Rye	Acres :	5	4	4	-20	-20	4	-20	
	Bu. :	55	44	44	-20	-20	44	-20	
Corn-all purposes	Acres :	33	55	40	+ 6	+21	50	+52	
	Bu. :	1,138	1,260	1,440	+11	+27	1,800	+58	
Oats, for grain	Acres :	164	150	140	- 9	-15	120	-27	
	Bu. :	6,232	5,700	5,320	- 9	-15	4,560	-27	
Barley	Acres :	155	180	200	+16	+29	200	+29	
	Bu. :	5,580	6,419	7,132	+15	+28	7,132	+28	
Rice	Acres :	-	-	-	-	-	-	-	
	Bu. :	-	-	-	-	-	-	-	
Flaxseed	Acres :	10	10	10	0	0	10	0	
	Bu. :	85	90	90	+ 6	+ 6	90	+ 6	
Beans (dry edible)	Acres :	108	160	160	+48	+48	110	+ 2	
	Cwt. :	1,501	1,888	1,888	+26	+26	1,298	-14	
Hay, all exclud- ing sorghums	Acres :	1,106	1,175	1,200	+ 6	+ 8	1,300	+18	
Alfalfa	Tons :	2,233	2,491	2,544	+12	+14	2,742	+23	
	Acres :	758	825	850	+ 9	+12	900	+19	
	Tons :	1,819	2,062	2,125	+13	+17	2,250	+24	
Sorghums, all except sirup	Acres :	-	-	-	-	-	-	-	
Sugar beets	Acres :	73	75	75	+ 3	+ 3	75	+ 3	
	Tons :	985	1,050	1,050	+ 7	+ 7	1,050	+ 7	
Potatoes	Acres :	124	120	110	- 3	-11	100	-19	
	Bu. :	28,520	27,600	25,300	- 3	-11	23,000	-19	
Sweet potatoes	Acres :	-	-	-	-	-	-	-	
	Bu. :	-	-	-	-	-	-	-	
Apples, commercial	Bu. :	2,574	1,850	1,850	-28	-28	1,700	-34	
Peaches	Bu. :	136	150	150	+10	+10	150	+10	
Oranges	Boxes :	-	-	-	-	-	-	-	
Grapefruit	Boxes :	-	-	-	-	-	-	-	
Cotton	Acres :	-	-	-	-	-	-	-	
	Bales :	-	-	-	-	-	-	-	
Commercial vegetables	Acres :	14	15	15	+ 7	+ 7	16	+14	
	Tons :	62	66	66	+ 6	+ 6	71	+15	

Continued

Table 16.- Idaho crop and livestock production: 1939 actual, 1943-45  
expected and desirable, and long-time desirable - Continued

Item	Unit	1939 actual	1943-45		Percentage		Long-time desirable	Fctg. change from 1939
			Estimated acreage or number & production:	1939	change from 1939	Desir- (tentative):		
		Expected	Desirable	Ex- pected:	Desir- able:			
		(000)	(000)	(000)	(000)		(000)	
Beef & veal pro- duction, live weight	Lbs.	169,860	182,000	190,000	+ 7	+12	190,000	+12
Pork production, live weight	Lbs.	100,780	120,000	150,000	+19	+49	110,000	+ 9
Lamb & mutton pro- duction, live weight	Lbs.	113,520	116,000	116,000	+ 2	+ 2	116,000	+ 2
Milk cows, 2-yr. old and over January 1	No.	200	237	237	+19	+19	250	+25
Milk production	Lbs.	1,121,000	1,340,000	1,360,000	+20	+21	1,396,000	+25
Wool shorn	Lbs.	16,606	17,300	17,300	+ 4	+ 4	17,300	+ 4
Chicken egg pro- duction	Doz.	21,417	27,100	28,000	+27	+31	25,000	+17
Chickens raised	No.	4,096	5,500	5,500	+34	+34	4,500	+10

\* Less than 0.5 percent.

See table 2 for footnotes and sources of data.

Table 17.- Nevada crop and livestock production: 1939 actual, 1943-45  
expected and desirable, and long-time desirable

Item	Unit	1939 actual	1943-45		Estimated acreage or number & production:	1939 desirable	Ex- pected:	Desir- able:	(tentative): 1939	Pctg. change from 1939						
			Percentage													
			Expected	Desirable												
			(000)	(000)	(000)				(000)							
Number of farms	No.	3.6	3.6	3.6	0	0	3.6	3.6	0	0						
All land in farms	Acres	3,785	3,785	3,705	-0	0	3,785	3,785	0	0						
Cropland	Acres	488	488	488	0	0	488	488	0	0						
Wheat	Acres	16	15	15	-6	-6	15	15	-6	-6						
	Bu.	412	363	363	-12	-12	363	363	-12	-12						
Rye	Acres	-	-	-	-	-	-	-	-	-						
	Bu.	-	-	-	-	-	-	-	-	-						
Corn-all purposes	Acres	4	6	7	+50	+75	8	+100								
	Bu.	120	169	210	+40	+80	244	+103								
Oats, for grain	Acres	7	6	6	-14	-14	6	-14								
	Bu.	245	223	223	-9	-9	223	-9								
Barley	Acres	15	18	20	+20	+33	20	+33								
	Bu.	525	652	725	+24	+38	725	+38								
Rice	Acres	-	-	-	-	-	-	-	-	-						
	Bu.	-	-	-	-	-	-	-	-	-						
Flaxseed	Acres	-	-	-	-	-	-	-	-	-						
	Bu.	-	-	-	-	-	-	-	-	-						
Beans (dry edible)	Acres	-	-	-	-	-	-	-	-	-						
	Cwt.	-	-	-	-	-	-	-	-	-						
Hay, all exclud- ing sorghums	Acres	321	344	344	+7	+7	344	+7								
	Tons	461	545	545	+18	+18	545	+18								
Alfalfa	Acres	136	145	145	+7	+7	145	+7								
	Tons	286	334	334	+17	+17	334	+17								
Sorghums, all except sirup	Acres	-	-	-	-	-	-	-	-	-						
Sugar beets	Acres	-	-	-	-	-	-	-	-	-						
	Tons	-	-	-	-	-	-	-	-	-						
Potatoes	Acres	2	3	3	+50	+50	2	0								
	Bu.	280	450	450	+61	+61	450	+61								
Sweet potatoes	Acres	-	-	-	-	-	-	-	-	-						
	Bu.	-	-	-	-	-	-	-	-	-						
Apples, commercial	Bu.	-	-	-	-	-	-	-	-	-						
Peaches	Bu.	6	5	5	-17	-17	5	-17								
Oranges	Boxes	-	-	-	-	-	-	-	-	-						
Grapefruit	Boxes	-	-	-	-	-	-	-	-	-						
Cotton	Acres	-	-	-	-	-	-	-	-	-						
	Bales	-	-	-	-	-	-	-	-	-						
Commercial vegetables	Acres	-	-	-	-	-	-	-	-	-						
	Tons	-	-	-	-	-	-	-	-	-						

Continued

Table 17.- Nevada crop and livestock production: 1939 actual, 1943-45  
expected and desirable, and long-time desirable - Continued

Item	Unit	1939 actual	1943-45		Percentage		Pctg. change from 1939
			Estimated acreage or number & production:		Long-time desirable:		
			Expected	Desirable	Ex- pected:	Desir- (tentative):	
			(000)	(000)	(000)	(000)	
Beef & veal pro- duction, live weight	Lbs.	77,415	84,371	85,000	+ 9	+10	85,000 +10
Pork production, live weight	Lbs.	5,770	5,900	5,900	+ 2	+ 2	5,700 - 1
Lamb & mutton production, live weight	Lbs.	26,695	25,226	23,226	-13	-13	23,226 -13
Milk cows, 2-yr. old and over January 1	No.	21	22	22	+ 5	+ 5	22 + 5
Milk production	Lbs.	113,000	118,700	118,700	+ 5	+ 5	118,700 + 5
Wool shorn	Lbs.	6,080	5,724	5,724	- 6	- 6	5,724 - 6
Chicken egg pro- duction	Doz.	2,000	2,250	2,250	+13	+13	2,250 +13
Chickens raised	No.	323	404	404	+25	+25	404 +25

See table 2 for footnotes and sources of data.

Table 18.-<sup>7</sup> Oregon crop and livestock production: 1939 actual, 1943-45  
expected and desirable, and long-time desirable

Item	Unit	1939 actual	1943-45		Percentage		Pctg. change from 1939
			Estimated acreage or number & production:		1939	Long-time desirable:	
			Expected	Desirable	Ex- pected:	Desir- (tentative):	
			(000)	(000)	(000)	(000)	
Number of farms	No.:	61.8	63.0	63.0	+ 2	+ 2	63.0 + 2
All land in farms	Acres:	17,983	17,988	17,988	0	0	17,988 0
Cropland	Acres:	4,041	4,100	4,100	+ 1	+ 1	4,100 + 1
Wheat	Acres:	756	850	750	+12	- 1	750 - 1
	Bu.:	16,108	17,360	16,000	+ 8	- 1	16,000 - 1
Rye	Acres:	45	46	45	+ 2	0	29 - 36
	Bu.:	562	607	594	+ 8	+ 6	383 - 32
Corn-all purposes	Acres:	36	65	75	- 2	+14	84 +27
	Bu.:	2,046	2,145	2,475	+ 5	+21	2,772 +35
Oats, for grain	Acres:	350	300	300	-14	-14	250 -29
	Bu.:	11,725	9,540	9,540	-19	-19	7,950 -32
Barley	Acres:	182	200	200	+10	+10	150 -18
	Bu.:	5,369	5,600	5,600	+ 4	+ 4	4,200 -22
Rice	Acres:	-	-	-	-	-	-
	Bu.:	-	-	-	-	-	-
Flaxseed	Acres:	7	6	6	-14	-14	6 -14
	Bu.:	63	60	60	- 5	- 5	60 - 5
Beans (dry edible)	Acres:	2	2	2	0	0	2 0
	Cwt.:	16	16	16	0	0	16 0
Hay, all exclud- ing sorghums	Acres:	1,033	1,043	1,100	+ 1	+ 6	1,200 +16
Alfalfa	Tons:	1,675	1,732	1,826	+ 3	+ 9	1,992 +19
	Acres:	264	275	300	+ 4	+14	400 +52
	Tons:	675	704	768	+ 5	+14	1,024 +52
Sorghums, all except sirup	Acres:	-	-	-	-	-	-
Sugar beets	Acres:	7	7	7	0	0	7 0
	Tons:	98	98	98	0	0	98 0
Potatoes	Acres:	45	46	46	+ 2	+ 2	60 +33
	Bu.:	7,200	7,130	7,130	- 1	- 1	9,300 +29
Sweet potatoes	Acres:	-	-	-	-	-	-
	Bu.:	-	-	-	-	-	-
Apples, commercial	Bu.:	2,900	2,800	2,800	- 3	- 3	2,330 -20
Peaches	Bu.:	391	375	375	- 4	- 4	375 - 4
Oranges	Boxes:	-	-	-	-	-	-
Grapefruit	Boxes:	-	-	-	-	-	-
Cotton	Acres:	-	-	-	-	-	-
	Bales:	-	-	-	-	-	-
Commercial vegetables	Acres:	38	40	40	+ 5	+ 5	50 +32
	Tons:	167	176	176	+ 5	+ 5	220 +32

Continued

Table 18.- Oregon crop and livestock production: 1939 actual, 1943-45  
expected and desirable, and long-time desirable - Continued

Item	Unit	1943-45			Percentage			Pctg. change from 1939	
		Estimated acreage or number & production:			Long-time desirable:				
		1939 actual	1939	Ex- pected:	Desir- able (tentative):				
				Desirable	Ex- pected:	able	1939		
		(000)	(000)	(000)		(000)			
Beef & veal pro- duction, live weight	Lbs.	229,690	239,400	260,000	+ 4	+13	260,000	+13	
Pork production, live weight	Lbs.	68,195	85,150	150,000	+25	+120	100,000	+47	
Lamb & mutton production, live weight	Lbs.	94,475	83,200	90,000	-12	- 5	90,000	- 5	
Milk cows, 2-yr. old and over January 1	No.	258	270	290	+ 5	+12	320	+24	
Milk produc- tion	Lbs.	1,364,000	1,600,000	1,725,000	+17	+26	1,725,000	+26	
Wool shorn	Lbs.	16,901	16,000	16,750	- 5	- 1	16,750	- 1	
Chicken egg pro- duction	Doz.	29,167	36,000	38,000	+23	+30	35,000	+20	
Chickens raised	No.	4,328	5,350	5,600	+24	+29	5,200	+20	

See table 2 for footnotes and sources of data.

Table 19.- Utah crop and livestock production: 1939 actual, 1943-45  
expected and desirable, and long-time desirable

Item	Unit	1943-45		Percentage		Pct change from 1939
		1939	Estimated acreage or number & production:	change from 1939	Long-time desirable:	
		actual	Expected	Desirable	(tentative)	
		(000)	(000)	(000)	(000)	(000)
Number of farms	No.	25.4	25.4	25.0	0	-2
All land in farms	Acres	7,302	7,302	7,302	0	0
Cropland	Acres	1,367	1,367	1,367	0	0
Wheat	Acres	226	225	225	*	199
	Bu.	3,989	4,644	4,644	+16	+16
Rye	Acres	4	4	4	0	4
	Bu.	32	52	32	0	32
Corn-all purposes	Acres	19	24	29	+26	+53
	Bu.	475	348	783	+36	+65
Oats, for grain	Acres	29	25	20	-14	-31
	Bu.	980	900	780	-8	-20
Barley	Acres	68	90	95	+32	+40
	Bu.	2,516	3,690	3,895	+47	+55
Rice	Acres	-	-	-	-	-
	Bu.	-	-	-	-	-
Flaxseed	Acres	-	-	-	-	-
	Bu.	-	-	-	-	-
Beans (dry edible)	Acres	-	-	-	-	-
	Cwt.	-	-	-	-	-
Hay, all exclud- ing sorghums	Acres	567	602	600	+6	+6
	Tons	1,038	1,252	1,250	+22	+22
Alfalfa	Acres	447	485	483	+8	+8
	Tons	894	1,116	1,111	+25	+24
Sorghums, all except sirup	Acres	-	-	-	-	-
Sugar beets	Acres	53	48	45	-9	-15
	Tons	683	672	630	-2	-8
Potatoes	Acres	13	17	17	+31	+31
	Bu.	2,016	2,720	2,720	+35	+35
Sweet potatoes	Acres	-	-	-	-	-
	Bu.	-	-	-	-	-
Apples, commercial	Bu.	395	300	300	-24	-24
Peaches	Bu.	564	600	600	+6	+6
Oranges	Boxes	-	-	-	-	-
Grapefruit	Boxes	-	-	-	-	-
Cotton	Acres	-	-	-	-	-
	Bales	-	-	-	-	-
Commercial vegetables	Acres	23	32	32	+39	+39
	Tons	101	141	141	+40	+40

Continued

Table 19.- Utah crop and livestock production: 1939 actual, 1943-45  
expected and desirable, and long-time desirable - Continued

Item	Unit	1939 actual	1943-45		Percentage		Pctg. change from 1939
			Estimated acreage or number & production		change from 1939	Long-time desirable	
			Expected	Desirable	Ex- pected	Desir- able	
			(000)	(000)	(000)	(000)	
Beef & veal pro- duction, live weight	Lbs.	97,820	97,200	97,200	*	*	93,500 - 4
Pork production, live weight	Lbs.	29,440	31,390	31,290	+ 7	+ 7	25,000 - 15
Lamb & mutton production, live weight	Lbs.	85,459	76,336	76,336	-11	-11	73,741 - 14
Milk cows, 2-yr. old and over January 1	No.	100	111	111	+11	+11	110 +10
Milk production	Lbs.	538,000	635,000	640,000	+18	+19	595,500 +11
Wool shorn	Lbs.	19,444	19,437	19,437	*	*	18,776 - 3
Chicken egg pro- duction	Doz.	21,333	27,000	30,000	+27	+41	30,000 +41
Chickens raised	No.	3,355	4,000	4,400	+19	+31	3,900 +16

\* Less than 0.5 percent.

See table 2 for footnotes and sources of data.

Table 20.- Washington crop and livestock production: 1939 actual, 1943-45  
expected and desirable, and long-time desirable

Item	Unit	1939 actual	1943-45		Percentage		Pctg. change from 1939
			Estimated acreage or number & production:		Long-time desirable:		
			Expected	Desirable	Ex- pected:	Desir- (tentative):	
			(000)	(000)	(000)		(000)
Number of farms	No.	81.7	83.0	82.0	+ 2	*	82.0
All land in farms	Acres	15,182	15,200	15,200	*	*	15,200
Cropland	Acres	6,229	6,400	6,200	+ 3	*	6,050
Wheat	Acres	1,901	2,100	1,900	+10	*	1,775
	Bu.	43,822	47,860	43,700	+ 9	*	41,700
Rye	Acres	26	28	28	+ 8	+ 8	28
	Bu.	260	255	255	- 2	- 2	255
Corn-all purposes	Acres	32	34	40	+ 6	+25	35
	Bu.	1,104	1,200	1,410	+ 9	+28	1,235
Oats, for grain	Acres	229	220	220	- 4	- 4	150
	Bu.	11,221	10,648	10,648	- 5	- 5	7,260
Barley	Acres	96	150	200	+56	+108	150
	Bu.	3,120	4,935	6,580	+58	+111	4,935
Rice	Acres	-	-	-	-	-	-
	Bu.	-	-	-	-	-	-
Flaxseed	Acres	9	11	11	+22	+22	11
	Bu.	99	110	110	+11	+11	110
Beans (dry edible)	Acres	-	-	-	-	-	-
	Cwt.	-	-	-	-	-	-
Hay, all exclud- ing sorghums	Acres	1,017	1,039	1,059	+ 2	+ 4	1,100
	Tons	1,925	1,984	2,034	+ 3	+ 6	2,117
Alfalfa	Acres	300	360	380	+20	+27	400
	Tons	720	900	950	+25	+32	1,000
Sorghums, all except sirup	Acres	-	-	-	-	-	-
Sugar beets	Acres	12	12	12	0	0	12
	Tons	210	210	210	0	0	210
Potatoes	Acres	42	46	46	+10	+10	44
	Bu.	7,350	8,050	8,050	+10	+10	7,700
Sweet potatoes	Acres	-	-	-	-	-	-
	Bu.	-	-	-	-	-	-
Apples, commercial	Bu.	26,000	24,250	24,250	- 7	- 7	22,500
Peaches	Bu.	1,210	1,470	1,470	+21	+21	1,300
Oranges	Boxes	-	-	-	-	-	-
Grapefruit	Boxes	-	-	-	-	-	-
Cotton	Acres	-	-	-	-	-	-
	Bales	-	-	-	-	-	-
Commercial vegetables	Acres	49	59	59	+20	+20	65
	Tons	216	260	260	+20	+20	286

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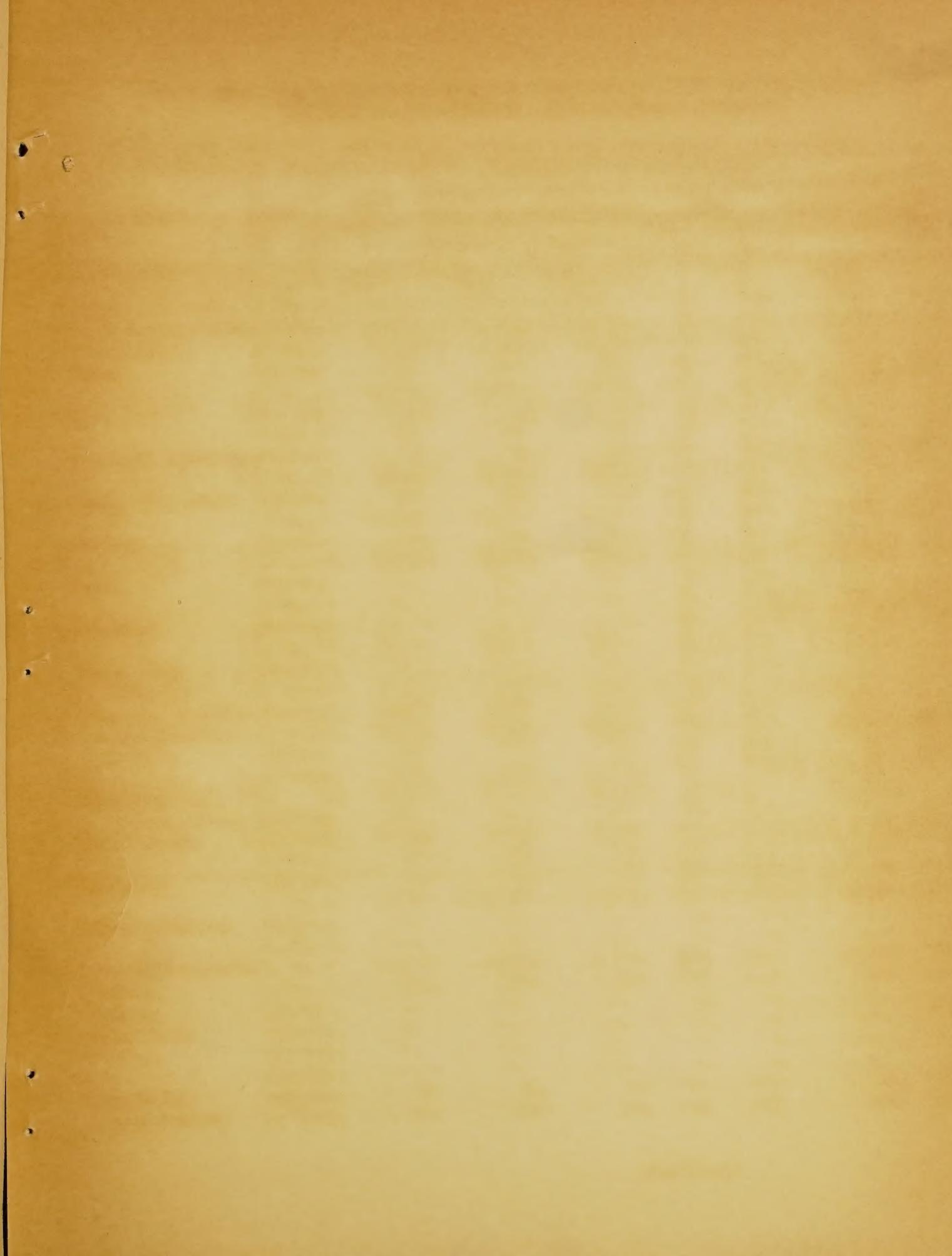
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Table 20.- Washington crop and livestock production: 1939 actual, 1943-45 expected and desirable, and long-time desirable - Continued

Item	Unit	1939 actual	1943-45		Percentage		Pctg. change from 1939	
			Estimated acreage or number & production		change from 1939	Long-time desirable		
			Expected	Desirable	Ex- pected	Desir- (tentative)		
			(000)	(000)	(000)	(000)		
Beef & veal pro- duction, live weight	Lbs.	160,960	187,020	200,000	+16	+24	200,000	+24
Pork production, live weight	Lbs.	71,555	88,500	140,000	+21	+96	100,000	+40
Lamb & mutton production, live weight	Lbs.	37,685	35,604	35,604	- 6	- 6	35,604	- 6
Milk cows, 2-yr. old and over January 1	No.	345	384	390	+11	+13	400	+16
Milk production	Lbs.	2,001,000	2,410,000	2,452,200	+20	+23	2,453,000	+23
Wool shorn	Lbs.	6,074	5,934	5,934	- 2	- 2	5,934	- 2
Chicken egg pro- duction	Doz.	59,417	75,000	75,000	+26	+26	65,000	+ 9
Chickens raised	No.	8,790	11,000	11,000	+25	+25	9,000	+ 2

\* Less than 0.5 percent.

See table 2 for footnotes and sources of data.



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